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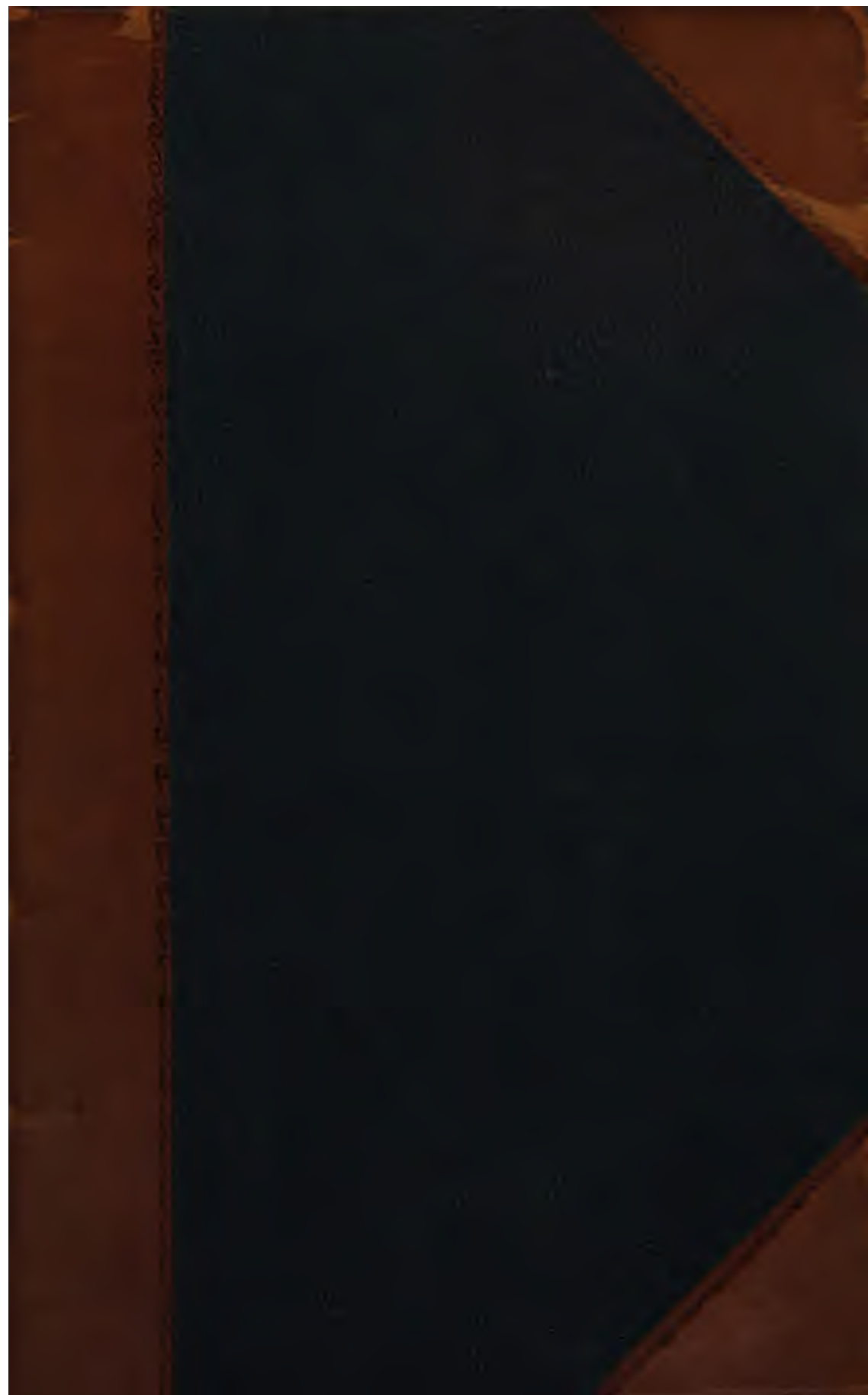
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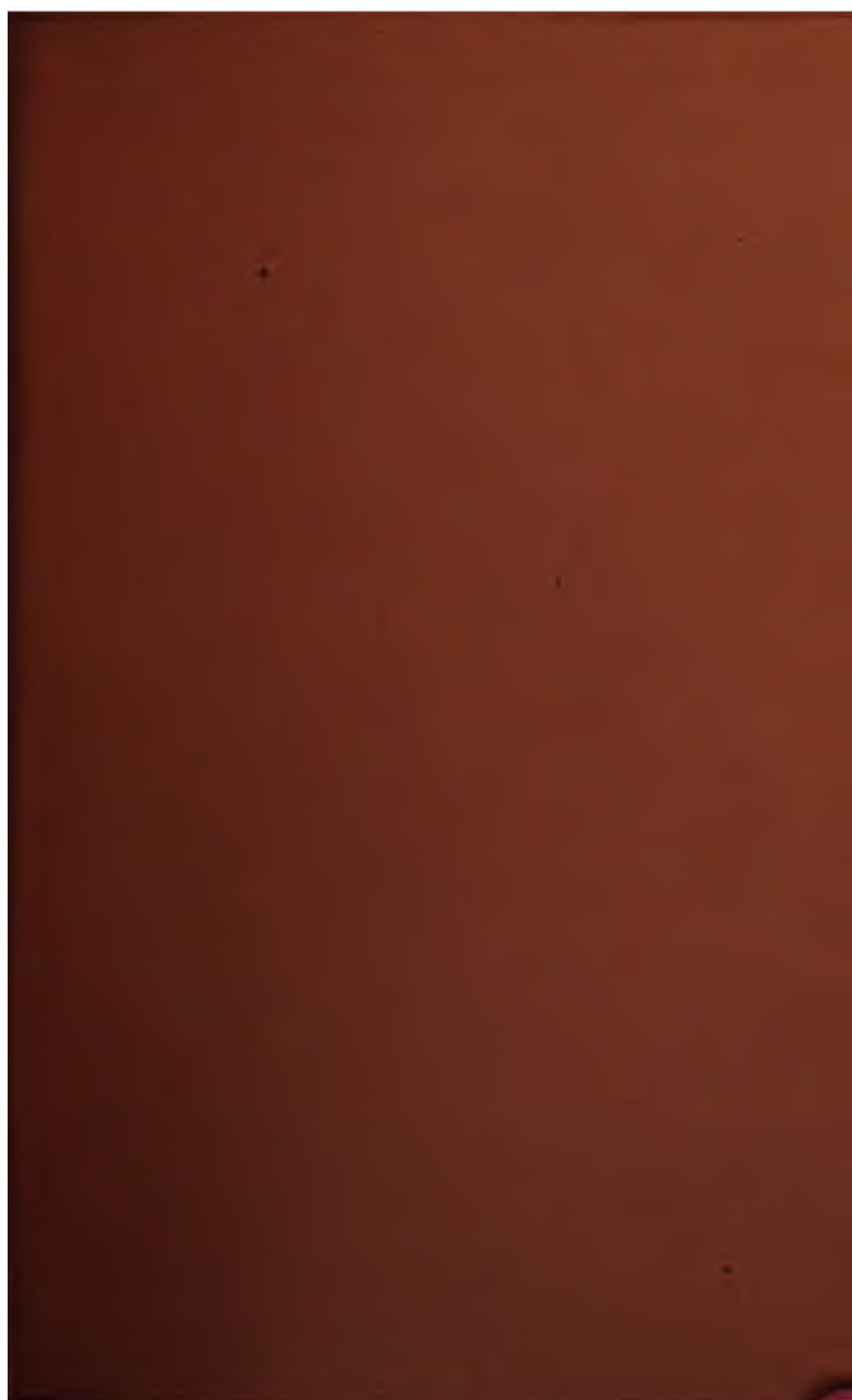
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THE
QUARTERLY JOURNAL
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PSYCHOLOGICAL MEDICINE
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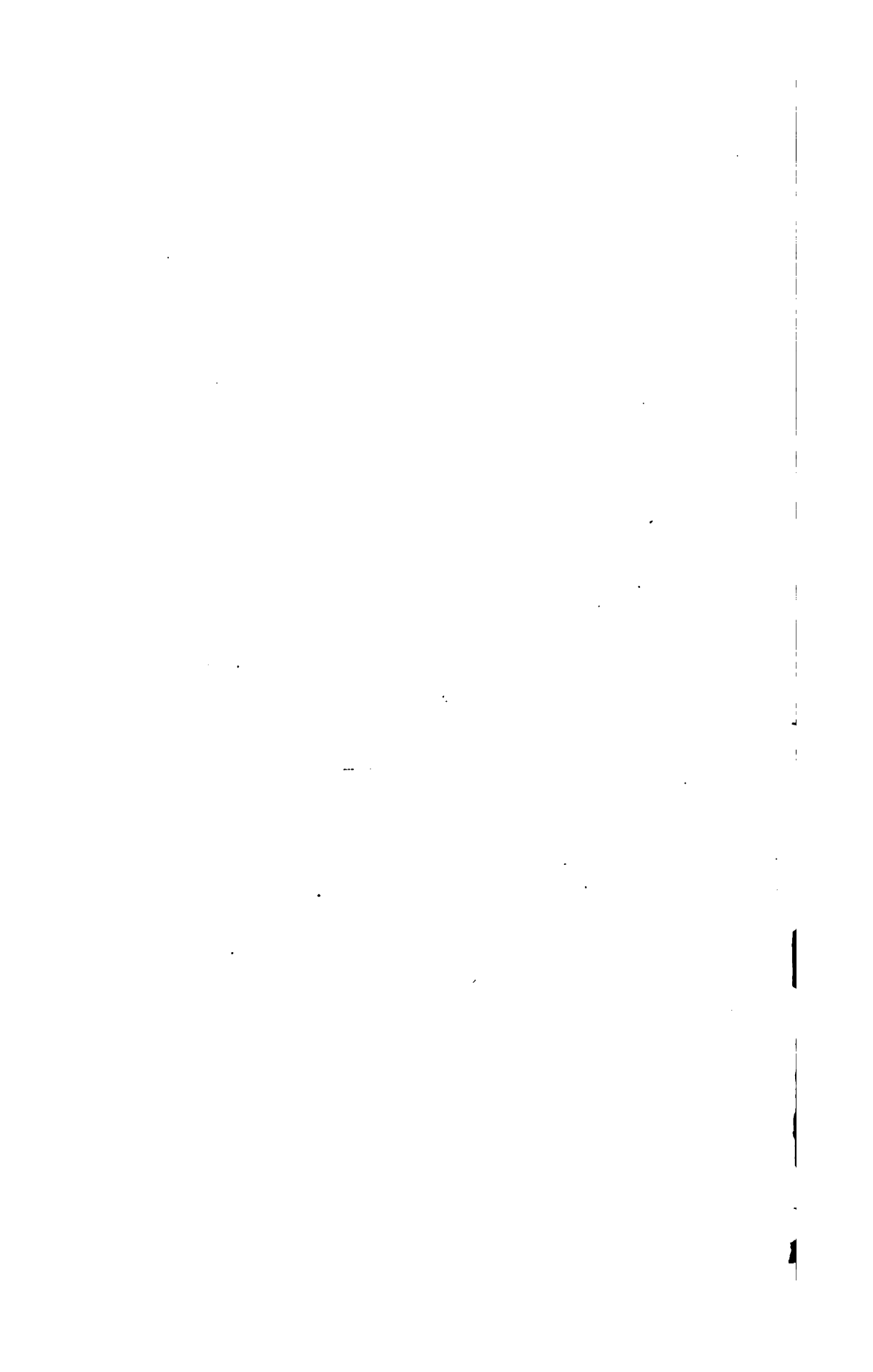
WILLIAM A. HAMMOND, M.D.,

Professor of Diseases of the Mind and Nervous System in the Bellevue Hospital Medical College, &c.

VOLUME I.



NEW YORK:
A. SIMPSON & CO., 60 DUANE STREET.
1867.



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THE QUARTERLY JOURNAL
OF
PSYCHOLOGICAL MEDICINE
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MEDICAL JURISPRUDENCE.

Vol. I.]

JULY, 1867.

[No. I.]

ORIGINAL COMMUNICATIONS.

On Instinct: Its Nature and Seat.

By WILLIAM A. HAMMOND, M. D., *Professor of Diseases of the Mind and Nervous System in the Bellevue Hospital Medical College, &c.*

PART 1. THE NATURE OF INSTINCT.

A great deal of confusion has existed among physiologists and psychologists relative to the differences between instinct and reason, and undoubtedly there are many difficulties in the way of distinguishing with perfect accuracy, the manifestations belonging to each. No inconsiderable amount of the obscurity has arisen from the loose manner in which words have been employed and meanings ascribed to them, and still more from ignorance of normal mental and nervous phenomena. I shall endeavor, therefore, to give a clear idea

of what instinct is, and to separate it by well defined lines from intellection before proceeding to state my views relative to its location.

Dr. Reid¹ defines instinct as "a natural blind impulse to certain actions, without having any end in view without deliberation, and very often without any conception of what we do."

As an example of instinctive motions, he says: "Thus a man breathes, while he is alive, by the alternate contraction and relaxation of certain muscles, by which the chest and of consequence the lungs are contracted and dilated. There is no reason to think that an infant new-born knows that breathing is necessary to life in its new state, that he knows how it must be performed or even that he has any thought or conception of that operation; yet he breathes as soon as he is born, with perfect regularity, as if he had been taught and got the habit by long practice."

Now Dr. Reid has regarded an action as instinctive which is altogether reflex in its character. The new-born child does not breathe because of "a natural blind impulse" to do so, but because the placental connection with its mother by which its blood was oxygenated, having been severed and the stimulus of atmospheric air having been applied to its skin, an impression is conveyed to the nervous centers, it is reflected to the respiratory muscles and breathing takes place. Both the above causes are necessary for the excitation of respiration, for the child does not breathe till pulsation

¹ *Essays on the Powers of the Human Mind*, Edinburgh, 1803, Vol. III., p. 126.

has ceased in the cord, even though it be entirely expelled from the womb, nor will efforts at respiration be made if access to air is prevented. A short time ago I had the opportunity of witnessing an experiment performed by my friend Professor A. Flint, jr., which was extremely satisfactory, as showing the cause of the respiratory movements. A bitch which was being used for another investigation, was found to be with young. The animal was fully under the influence of chloroform, and whilst in this condition the uterus was opened and a litter of young abstracted. They were about half grown. A short time after they were placed on the table, efforts at respiration began, and were continued at intervals for half an hour. In these cases, the supply of oxygen from the mother having been suddenly cut off, a new exciting cause was brought into action to supply the imperative requirement of the system.

We frequently see the reflex character of the respiratory movements demonstrated upon persons who have fainted, or who are in stupor or convulsions, and in whom the actions in question are temporarily suspended. A little water thrown on the face, or current of air brought to bear upon it, or even a feather brushed across the cheeks, will often produce a deep inspiration of air.

Of other examples adduced by the same author, many are fully as inapplicable as the preceding. Darwin¹ makes no very clear distinction between in-

¹ *Zoonomia or the Laws of Organic Life*, Am. ed., Vol. I.. Philadelphia, 1812. Art Instinct, p. 101 et seq.

instinctive and rational actions, except, perhaps, that they differ in degree. . He cites many examples of what are ordinarily considered as belonging to the first named class, but appears to regard them as being the result of intellection. In the conclusion of his remarks upon the subject, he says :

“There is a criterion by which we may distinguish our voluntary acts or thoughts from those that are excited by our sensations. The former are always employed about the *means* to acquire pleasurable objects, or to avoid painful ones : while the latter are employed about the *possession* of those that are already in our power.”

According to the same author, many actions which are generally regarded as instinctive are the results of experience acquired during foetal existence. Thus he observes, that the foetus learns to perform certain movements, which are excited by a feeling of irksomeness at being kept too long in one position, and that sucking and swallowing are also acquired *in utero*. If, however, all such actions are to be regarded as instinctive, the fact that they have been performed in the mother's womb does not afford any explanation of their origin, It merely places the beginning a few weeks or months farther back than birth, without at all accounting for the cause of their initiation. Indeed, the theory rather obscurely enunciated by Darwin, that instinctive actions are the consequence of sensitive impressions does not distinguish them from actions which are clearly the results of reason or will.

Darwin quotes the following experiment from Galen,

"On dissecting a goat great with young, I found a brisk embryon, and having detached it from the matrix, and snatching it away before it saw its dam, I brought it into a certain room where there were many vessels, some filled with wine, others with oil, some with honey, others with milk or some other liquid, and in others were grains and fruits; we first observed the young animal get upon its feet and walk; then it shook itself, and afterwards scratched its side with one of its feet; then we saw it smelling to every one of these things that were set in the room, and when it had smelt to them all it drank up the milk."

This passage has been cited by many authors as affording a beautiful example of instinct, whereas, I think, a little reflection will satisfy the majority of thinking persons, that the action described was purely rational and volitional, and one which evinced a great deal of discrimination on the part of the prematurely born kid. It took that food which gave the most pleasurable impression to its sense of smell. It deliberately made a choice—the result of comparison and judgment. There was nothing instinctive, nothing blind or impulsive. If the kid had not smelt the other substances, but had drank the first one it touched, the action might have been due to a force which it was powerless to resist, and might have been regarded as instinctive.

Broussais¹ falls into the error of regarding all instinctive acts as due to impressions made upon the

¹ A Treatise on Physiology applied to Pathology (American Translation), Philadelphia, 1826, p. 77, et seq.

senses, and likewise fails to distinguish between such actions and those of a reflex character. The want of breath, hunger, thirst, etc., are therefore, in his opinion, the excitants of motions—respiration, eating, drinking, which are instinctive. Such functions are no more kept in operation by instinct than any other acts which an individual is in the habit of doing, or which he deems it necessary or proper to perform. As well might it be said that if a person imperatively requires a certain book from a shelf of his library, he is actuated by instinct if he rises from his chair and gets it.

Hartley¹ is more correct than the authors cited, when he says that instinctive actions are not the result of external impressions. This germ of lucidity is however so mixed up with mystical and confused ideas relative to his theory of vibrations, that it is difficult to arrive at a clear conception of his entire meaning.

Sir T. C. Morgan² on the contrary regards instincts as being due to sensational impressions. He says :

“Those impressions which excite a certain degree of pleasure or pain, or which experience has associated with those affections, stimulate the cerebral system to volition, an action which influences the muscles and determines their contractions, in a definite and congruous series.

The actions thus produced may proceed immediately from the impression and in close connection with it. They are then termed *instinctive*. They may re-

¹ Observations on Man, his Frame, his Duty, and his Expectations. London, 1791, p. 243.

² Sketches of the Philosophy of Life, London, 1818, p. 292.

sult, also, from the associations which the impression excites, and be governed by a consciousness of the end to be produced; and then they are called *voluntary*.

"Instinctive actions are immediately subservient to the preservation of life, and are prompted by sensations of pleasure or pain considerably acute. They arise in some cases from peculiar conditions of internal organs; and in others, from strong impressions made on the organs of sense. In the lower animals the stomach and generative organs originate nearly all the locomotive actions. The motions of the higher classes are more varied and numerous."

Cabanis¹ considers the subject of instinct with more philosophical knowledge than any writer of or before his day. As his views have been received with much attention, and have exerted a more or less governing influence over all subsequent inquiries, I shall discuss them at some length.

Philosophers are divided in regard to these two points. Some think, with Condillac, that all the acts of animals are due to reason, and are consequently the results of experience. Others contend that many of their actions are in no way connected with reason, and that whilst they all have their source in physical sensibility, they are performed without any other agency of the will than that which relates to its action, as the director of their execution. These actions are designated *instinctive*.

Some physiologists contend that sensibility is the

¹ *Rapports du Physique et du Moral de l'Homme*. Paris, 1824, t. 1 p. 77 et seq.

only source of all organic power. Others, among whom Haller is first, maintain that there is another property distinct and even independent of sensibility which they call irritability. As Cabanis says, however, the dispute is mainly one of words.

Within the womb of the mother, animals do not, properly speaking, experience any sensation. As soon as they are born, however, when they respire, when the action of the external air impresses more energy on their organs, and more activity, more regularity on their movements, it is not a simple change of habits which they experience, but a veritable new life which begins. From that moment appetites spring up, which they are impelled to gratify by an irresistible, internal force. So apt, for instance, is the infant at sucking, that Hippocrates concluded it was impossible the knowledge could be acquired so soon after birth, and contended that the foetus learned the necessary movements, by sucking the liquor amnii in the mother's womb. This point I have already considered when Darwin's views were under notice. In addition, it may be said that the foetus certainly does not learn to breath in its mother's womb, and that the necessary muscular actions towards this object, are fully as complex as those concerned in sucking.

Many quadrupeds are born with their eyes shut. Such can only find the nipples of their mother through the senses of smell and touch. These faculties they exercise with great sureness, and kittens will frequently, when half born, stretch out their necks in search of the source of their future nourishment.

These actions, and many others which could be brought forward, result from internal impressions received by the young of animals during gestation. They are not set in operation by sensations; on the contrary, the animal is prompted by the internal power to employ its senses, in order to accomplish its objects. This force, therefore, stands in lieu of the will. In the case of Galen's goat, already quoted, it was *instinct* which impelled the animal to use its senses. It was not instinct, but reason, that made it select the milk. Instinct is not, therefore, the result of experience, or of reason, or of any choice founded on sensations.

The line, therefore, between rational and instinctive actions, can be closely drawn. The former, as Locke and his disciples have proved, are formed from distinct impressions which come to our minds from exterior objects through the medium of our senses. The latter arise from within, as the offspring of a force entirely independent of, and even above the will. The etymology of the word "instinct" shows conclusively the meaning which has always been attached to it. It is formed from the two Greek radicals, *εν* *in* and *στίζειν* to *prick*; according to its derivative instinct, is the product of excitations, the stimulus to which is applied from the interior, that is to say, the result of impressions received from within.

Thus, in animals generally, and in man especially, there are two well defined kinds of impressions which are the sources of their ideas and their mental determinations; and these two kinds are found, but in different relation to each other, in all species.

From the foregoing brief account of Cabanis' views, it will be seen that he was fully aware of the true source of instinctive actions, and that he clearly distinguished between them and those which result from mental processes.

A writer,¹ whose name is not given, but who has evidently reflected a good deal upon the subject of instinct, and others of an analogous character, makes the great mistake of ascribing instinctive actions to external stimuli. Thus he says :

"We confess, however, that we do not see why the term *instinctive* should not be applied to *all* the actions which are performed in *direct response to an external stimulus*."

"And again,² we have employed the term instinctive here and elsewhere, to denote much more than is included under it by many writers. Some have restricted it to one class of excited actions, some to another; but we think that it may be applied with the greatest propriety to designate all those changes in the muscular system which are immediately excited by impressions from without, which are not dependent upon the exercise of the will, though more or less capable of being controlled by it, and which, if acting alone, deprive the being of the character of a free agent."

• This writer, although recognizing what are really instinctive actions, includes among them all reflex, and

¹ The British and Foreign Medico-Chirurgical Review, Vol. V, 1838, p. 491. Review of works on the Physiology of the Spinal Cord.

² Op. cit. p. 505.

even voluntary actions, going farther in this respect than any other author whose reflections have come under my notice. In a subsequent article he reiterates the opinion that the actions in question are all performed in obedience to external stimuli.

Dr. Alison¹ is more exact when he says : " The most correct expression of the difference between an action prompted by instinct and one prompted by reason is, that in the first case, the will acts in obedience to an impulse which is directly consequent upon certain sensations or emotions felt or remembered ; in the last, it acts in obedience to an impulse which results from acts of reasoning and imagination."

In a subsequent paragraph, however, Dr. Alison seems disposed to include such purely reflex operations as breathing, winking, coughing, sneezing, vomiting, etc., among instinctive actions.

Collineau,² in an exceedingly philosophical treatise on the mind, applies the word instinct to all interior, sensitive movements, intellectual, affective and mental, be they voluntary or involuntary, which are exercised without knowledge of the nature or cause by the being, acting immediately by virtue of organization and inherent dispositions.

In psychology, instinct begins everything. It is manifested with the first organic movements. It is in some respects an intelligence, communicated with life, and which is developed more or less, according to cir-

¹ Cyclopædia of Anatomy and Physiology, Vol. III, p. 3, Art. Instinct.

² *Analyse Physiologique de l'Entendement Humaine*, etc., Paris, 1847. p. 37.

cumstances, habitudes, and the degree of organization.

Instinct in man is arrested or weakened as soon as we have the intimate feeling or conscience of our intellectual acts; for this intimate feeling, this conscience, is the line of demarcation which is to be placed between instinctive actions and those due to intelligence. This line does not actually exist in nature, it is only a conception of the mind, in reality there is always instinct where there is intelligence, even when this latter is greatly in the ascendancy, and although reason, for the time being, causes instinct to disappear, it does not accomplish its destruction.

Before the intelligence of a being is brought into active existence, there is a force which excites movements, which diverts and limits them. It is an attribute of the sensibility already developed; it is a providential cause which precedes knowledge and reason, but which retains the first place with animals not endowed with the organ of thought, and with those intelligent beings whose intellectual functions are not yet fully developed nor sufficiently exercised.

Instinctive dispositions extend to the moral life, and place bounds to our intelligence, which cannot be passed but with time and labor. Thus it is, that nations, like individuals, have their infancy, their middle age, and their decline, that certain ideas, tastes and proclivities are suitable to certain sexes, ages, constitutions, peoples, and climates.¹ Instinct is the insensible

¹ Dr. J. W. Draper in his "History of the Intellectual Development of Europe" has advanced this same idea of the analogy between individuals and nations.

and often unsuspected link, which by all points, in all times, and in every case attaches individual life to general life. It is thus that absolute liberty, in regard to which there has been so much dispute, becomes impossible; for man, like the lower animals, enjoys free will only within the instinctive limits which the Supreme Being has placed to his intelligence, to his affections, and to the agents of his mind.

So far as individuals are concerned, instinct is not infallible, but if we regard it as it is manifested in masses and species, we see that it never fails and never deceives. Its existence is inseparably attached to the organic life of the being. It controls and determines, with an admirable certainty, all actions, even those which require the co-ordination of a large number of organs. Take, for instance, the numerous and complex acts performed by certain animals at the instant of their birth, as well as by man at all periods of his life. We can, indeed, say with truth, that nature thinks and acts for us in an infinitude of ways that long observation and all the efforts of reason would fail in making us comprehend.

Instinct is then innate, it is present at all epochs or existence, at all moments, whilst the ideas which come to us, acquired by the senses, and which are formed by the intelligence, increase, and are rendered more perfect by exercise and the various uses to which they are subjected by life.

I have only given a very general idea of M. Colli-
nead's views, and have omitted much that is interesting in his argument. I do not know where there is a

more lucid exposition of the psychology of instinct than is contained in his admirable volume. His conclusions in regard to the nature of this faculty are briefly as follows :

He divides all manifestations of instinct into two classes :

1st. All spontaneous movements, which, in beings endowed with organization and animal life, are constantly in force, according to the species, and more or less directly with a common aim of preservation, reproduction or propagation.

2nd. All acts which begin, and can even sometimes be finished independently of sensation, of comparison, of judgment, of ideas, and of reflection, that is to say, without the aid of the reason or the will, without imitation, without the knowledge of means by which they might be accomplished, nor of the results to which they might lead. The word *instinct* is the indication of the unknown cause and of the sum total of acts of this nature.

Voisin,¹ though giving no precise definition of instinct, sets out with the observation that he will consider in his treatise the fundamental and primitive forces of our cerebral constitution. He then treats of the "instinct of generation," the "social instinct," the "instinct of self defence," the "instinct of destruction," etc. Showing that in his opinion these are primary faculties not acquired by sensation or experience, but originating with the life of the individual and developing therewith.

¹ Analyse de l'Entendement Humaine, etc. Paris, 1858, p. 58, et seq.

Leuret and Gratiolet¹ in treating of the instincts, enunciate views of which the following is an abstract:

When we voluntarily perform—that is to say, with the knowledge of our will—certain acts, the value of which our intelligence has not estimated, and which it has not prepared, these acts are not attributed to the mind but to the instinct. We do not apply the term instinct to that general and indefinite tendency, by which a simple impression awakening a homogeneous feeling produces a correlative act. *That* is an automatic reaction and is not instinct. To fly from a sorrow that threatens us, to combat a harm that has attacked us, to pursue an object that arouses in us pleasing emotions is to act *automatically*, it is true, but not instinctively. Instinct is not at all a reaction produced in connection with exterior impressions. It is an *innate* tendency which is due from the first moment of life to the arrangement of the organic mechanism, and to harmonious influences pre-ordained with the world. For instance, let us suppose a clock wound up, and let us also suppose the loom of a weaver. As soon as the pendulum of the one is set in motion the hands mark the hour; as soon as the hand of the workman raises the lever of the other the fabric begins to be made. Let us further suppose these machines to be gifted with a certain degree of conscience and personality; the instinct of the clock will be to mark the hour, and that of the loom to weave tissues.

Thus, between inanimate and animate machines there

¹ Anatomie Comparée du System Nerveux Consideré dans ses Rapports avec l'Intelligence. Paris, 1839-1857, t. II. p. 632.

is but one point of difference ; the one acts and is ignorant of what it does, the other is restrained by an overpowering principle of which it is conscious. Therefore when an animal wishes to act, its will is directed towards the organs by which action is possible. No man has the instinct to fly ; no bird has the instinct to grasp things with its wings. The natural will never therefore, exceed the limits of possible action. Thus instincts differ according to species and individuals, that is to say, according to organization. The little duck which the hen has hatched seeks the water as soon as it has escaped from the egg, and swims without ever having been taught. Every being and thing, says St. Augustin, seeks the place which it ought to occupy in nature. One accomplishes its work blindly, another mingles a little intelligence with its instinct, but all fulfill their destiny necessarily ; to man alone has been accorded the right of ambition and revolt in order that the virtue of submission should also exist.

MM. Leuret and Gratiolet thus distinctly recognize the difference between reflex and instinctive actions, and give a very clear idea of the relations which exist between instinct and the will.

Müller¹ advances views similar to those of the physiologists just quoted. He regards instinct as innate, as not excited by impressions made on the senses, and as being due to a determinate purpose identical with creative organic power.

¹ Elements of Physiology. Translated by Dr. Baly, London, 1842. Vol. II. p. 947.

Dr. Draper¹ has enunciated several erroneous ideas relative to instinct. He deems it incapable of improvement and not liable to error. Both these opinions are, as I shall endeavour to show hereafter, incorrect.

My friend, Dr. Dalton,² in the course of some very philosophical remarks in regard to instinct, evidently considers it as due to impressions conveyed inwardly from the senses, and does not, I think, sufficiently discriminate between its manifestations and those which are of a reflex character. These errors, as we have seen, have been committed by several authors, and perhaps the majority of those who have written upon the subject, entertain similar views. There seems to be an indisposition to recognize the fact that there are innate organic predispositions born with the being exhibiting them, and predominating over all mental and nervous powers.

Lelut³ in the main, adopts the theories of Stahl relative to the differences between instinct and reason. The *λόγος*, that is to say, the general formula for all those acts of the mind, in the direction of the body which are vague, intermittent and sensitive, rather than intellectual—corresponding to the instinct, while the *λογισμός* is that state, that degree of intelligence where the reason is in the ascendancy.

His views are more transcendental than philosophical, and do not evince much physiological research.

¹ Human Physiology, Statical and Dynamical. New York, 1856, p. 603.

² A Treatise on Human Physiology. Third Edition. Philadelphia, 1864. p. 443-44.

³ Physiologie de la Pensée, etc. 2ième édition. Paris, 1862. p. 176 et seq.

Fredault¹ considers instinct under the term "animal impulsion," as that faculty of animals which excites sensibility and motion. Exterior causes, in his opinion, influence this faculty.

Dr. McCosh² argues with great vigor in favor of the existence of intuitive laws, principles, or rules which guide the mind. At the same time, he denies with Locke the existence of innate *ideas*. I am unable to distinguish between these intuitions of Dr. McCosh and instincts, although he makes no attempt to explain or account for the latter, and even altogether ignores their existence. The following quotation shows the character which he ascribes to intuitions and their identity with instincts:

"*They are native.* Hence they have been called natural, innate, connate, implanted constitutional. All these phrases point to the circumstance that they are not acquired by practice nor the result of experience, but are in the mind naturally as constituents of its very being, and involved in its higher exercises. In this respect they are analogous to universal gravitation and chemical affinity, which are not produced in bodies as they operate, but are in the very nature of bodies and the springs of their action."

Flourens³ recognizes three great facts; the instinct, the intelligence of animals, and the intelligence of man.

¹ *Traité d'Anthropologie Physiologique et Philosophique.* Paris, 1863 p. 425.

² *The Intuitions of the Mind Inductively Investigated.* London, 1860, p 42.

³ *Del l'Instinct et de l'Intelligence des Animaux.* Quatrième Edition, Paris, 1861, p. 108 et seq.

Each of these has its fixed limit. The instinct acts without knowing; the intelligence knows, in order to act. The intelligence of man alone knows and is self-conscious. What an animal does through instinct, it does without having learned how to do it; what it does through the intelligence, it does through experience or instruction. He denies reason to all animals lower in the scale of creation, than man.

Flourens, however, is not, I think, consistent in this latter view. The example which he gives of the difference between an instinctive and an intelligential action shows this. I quote his exact language:

"Every one has seen the garden spider, whose web is made of strands radiating from a centre. I have often seen it just hatched begin to weave its web. Here instinct acts alone.

"But if I tear the web, the spider repairs it; it repairs the torn part; it does not touch the rest, and this torn place it repairs as often as I tear it.

"There is in the spider the mechanical *instinct* which *makes* the web, and the *intelligence* (the kind of intelligence which exists in spiders) which advises it of the torn place—of the place where the instinct must act."

M. Flourens might have added that there also exists the *reason*, which enables the spider to deduce from the evidence of its senses the conclusion that its web is torn, and that it may be mended by similar operations to those employed in its original construction.

Mr. Alfred Smee¹ appears to have no definite and

¹ *Instinct and Reason Deduced from Electro Biology*. London, 1850, p. 135.

exact conception of the nature of instinct. He says:

"If we carefully regard the operations of the lower animals, we perceive that in some respects they are distinguished for works of which even a Sir Christopher Wren, an Inigo Jones or a Stephenson might justly be proud, as they exhibit in their construction *a knowledge of laws and a perfection of design* which man can scarcely hope to obtain, and certainly in many cases if he had designed he could not have executed."

If this is a deduction from "Electro Biology" it may account for several other singular ideas contained in Mr. Smee's book.

The Rev. John Selby Watson,¹ in a very entertaining little book, just published, defines instinct as "an innate force or impulse in an animal, inclining it to act in a certain way."

This is very well as far as it goes. A smile is excited, however, when Mr. Watson immediately afterwards ascribes the action of Galen's kid (before mentioned) to chemical affinity.

My own views relative to the nature of instinct have been indicated, to some extent, in the comments I have made on the opinions of other investigators. I will proceed, however, to state them more systematically than I have yet done.

Instinct is that innate faculty which organic beings possess, by which they are enabled or impelled to perform acts without being prompted by the intellectual powers, and even in direct opposition thereto.

¹ The Reasoning Power in Animals. London, 1867, p. 6-8.

There are certain qualities and circumstances connected with instinct which require attentive consideration.

In the first place, instinctive acts are not the result of instruction or experience. This is one of the most prominent points wherein the actions in question differ from those which are the result of intelligence and reason. The latter are necessarily due to impressions conveyed to the mind through the senses and nerves, and therefore are of eccentric origin; the former are prompted by a force acting altogether without the agency of external sensation of any kind, and are of internal origin.

Thus the new born child does not take its mother's breast because it smells, or sees, or recognizes it by the touch, or tastes the milk or even because it is hungry. It will suck other things that may be put into its mouth, showing that it is not guided by the evidence of any of its senses, for if this were the case the impression made upon its mind would be that of this other thing, a finger for instance, and it would immediately stop sucking. So little has sensation to do with the action that the child will even take nauseous mixtures without perceiving their disagreeable qualities. That hunger is not the immediately impelling force, is very evident from the fact that the child will suck before this sensation is formed, and that it will continue to do so after satiety is reached.

Besides, even admitting that in the new-born child impressions are conveyed to its brain through the senses, and that thus actions are initiated, what possible con-

nection can there be in its mind between the shape and softness of the mother's breast and the odor of milk, and the fact that by sucking its life will be maintained? Is it not self-evident that the senses can only lead to intellectual processes, and to these only as the result of experience? For instance, there is nothing about a lighted cigar that would lead a young puppy *a priori* to a conclusion in regard to the unpleasant consequences of smelling it. When, however, he has once made the attempt, has burnt his nose and been stifled with the smoke he has acquired an idea in relation to a lighted cigar which never deserts him. It is of course impossible that a new born child sucks at first because of any instruction it may have received or experience it may have acquired, and its mind being more immature than that of a young puppy more frequent instinctive efforts are necessary before it becomes capable of forming an idea of a necessary relation between the mother's milk and its own sensation of hunger.

The action is performed through instinct, the faculty which takes the place of reason till the latter is developed and which impels the child to an act, the consequences of which it has no possible means of knowing. Moreover in acephalous (headless) and amyencephalous (without head and spinal cord) children, and in which, consequently, there is no vestige of a brain, sucking is well performed.

Darwin's speculation on the subject of intra-uterine experience and to which reference has already been made, are evidently without value.

From what has been said, the reader will perceive that my faith in the power of infantile sensational impressions, is not great. It is well known that none of the senses are well developed in the new-born; the sight, the hearing, the taste and the smell are almost nothing and the sense of touch is scarcely apparent. The ability to feel pain is quite a different thing; this the infant has even in the womb. It is unphilosophical therefore, to assume that the new-born of man or the lower animals comes into the world with its senses in full operation.

Mr Catlow¹ in a very interesting and instructive volume which has just reached me, takes a view similar to that expressed above. He says: "The new-born infant is virtually, and in strict language, unconscious either of external impressions or of internal susceptibility."

Speaking of the actions of the new born he continues: "The capacity for these first instinctive movements is strictly natural; that is, native, or connate; being, as is said, prior to, and independent of, experience and instruction."

The distinction therefore between acts which are the result of instinct are these which proceed from intellection is capable of being clearly made out.

It is assumed by some authors that the instinct is

¹ On the Principles of Aesthetic Medicine or the Natural Use of Sensation and Desire in the Maintenance of Health and the Treatment of Disease as demonstrated by Induction and the Common Facts of Life, London 1867, p. 223-225.

incapable of improvement. There is an ambiguity about this expression which is liable to lead to erroneous ideas. It is true that the instinct of any one individual being cannot be improved. The only means by which such an object could possibly be attempted would be those afforded by the senses, and then reason would be developed and not instinct. The former would take the place of the latter. But instances of the education of the instinct through a series of generations are common enough. For instance, navigators relate that the ducks and other water birds of those regions which are not often visited by man evince no instinctive fear at his approach. It was probably a natural condition of these and many other animals not to be afraid of man. Gradually, however, through the operation of the same cause upon successive generations, an innate force has been created, and thus the young of many species of animals show from the first a fear of man. With the domestic animals, on the contrary, this force has been lost, for during many centuries an opposite education has been acting upon them. Again, the young of a pair of wild quails, hatched during the captivity of their parents, run away into the thicket as soon as they have broken the eggs. In this case there has not been enough time for the natural instinct to become obliterated. With many varieties of dogs the instincts have been wonderfully developed by long continued instruction and experience. It would appear, therefore, that the intelligence of former generations becomes converted into instinct in the descendants.

A curious circumstance, related by Cabanis,¹ is applicable to the question under consideration. He says: "In my district of country, and in several others which border upon it, when hatching hens are needed, it is customary to practice a singular procedure, which is worthy of notice. A capon is taken, the feathers are stripped from the breast, and it is rubbed with nettles and vinegar. In the state of local irritation which this operation induces, the capon is placed on the eggs which are to be hatched. At first he remains there mechanically, and in order to assuage the pain which he experiences. Very soon, however, there is established within him a series of unaccustomed, but agreeable impressions, which have the effect of attaching him to the eggs for the time requisite to bring the young to a state of maturity, and which also produces in him a species of factitious maternal love, which lasts, as in the hen, as long as the young have any need of his cares. Cocks cannot be thus used; they have an instinct which leads them in another direction."

Here we might almost say that an instinct is created in place of the one abolished, by the castration of the animal. It is one, however, which, from its nature and the attendant circumstances, cannot be propagated.

It is incorrect, also, to contend for the unerring character of instinct. Instances of its aberration are very common. The beaver, which proceeds to construct a dam across the room, in which it may be confined, commits a very serious, instinctive error.

In the placental animals, lower than man, instinct prompts to the division of the umbilical cord with the teeth. In several species, as the pig and the dog, this manifestation of the faculty occasionally becomes perverted, and the animals eat their own young.

In man the sexual instinct is liable to perversion, and the instinctive love of the mother for her offspring is sometimes turned to indifference and hatred.

No organism is absolutely perfect, physically or mentally. It would, therefore, be strange, if the instinct, alone, should not have its imperfections.

One other point, and I shall bring the first part of this memoir to a close.

In my definition of instinct, I have been careful to use the term "organic beings" instead of "animals." I did this because I am very sure that plants have instinct; that is, a force co-existent with their growth, and implanted originally in the seed, which impels them to the performance of actions, calculated to preserve their existence or secure their well being. We see this, power, manifested in those plants which shoot out tendrils in search of a support, in those which send their radicles deep into the earth in dry weather and in those which open and close their flowers with the rising and setting of the sun. These last acts are not a consequence of any physical influence of the heat or light of the sun's rays, for they are performed when both are excluded. The sun-flower turns its face to the sun at all periods of the day. It does the same thing, as I have ascertained, when it is entirely covered by an India rubber tent. I am clearly, therefore, of

the opinion that plants are endowed with instinct. It would be unphysiological to deny them the possession of this faculty—a faculty which stands them in place of reason, which they certainly have not. So far as I can perceive, the instinct of plants differs in no essential respect from that of animals. Its manifestations are, of course, very different.

As to the essential nature of instinct, it is a fact, as much as the blood, or the bile or the sap, are facts. It differs in organic beings in degree or kind, just as do the substances mentioned. It is implanted in all beings from their beginning, and is a necessary part of their constitution.

In the second part of this memoir I propose to inquire into the seat of instinct.

Merlin and his Influence on the English Character and Literature.

By WILLIAM A. HAMMOND, M.D.

AMONG the traditional personages of Britain who have exercised most influence upon the early literature of the Celtic nations, and whose half mythical, half real characteristics have delighted us in childhood and engaged the more serious attention of scholars of maturer age, Merlin, or Myrdhinn, occupies a place in the front rank. A prominent actor in Jack the Giant Killer, and other stories of fairies and ogres, indissolubly connected with the charming adventures of the Knights of the Round Table, enshrined by Spenser

in his delightful poem the Faery Queen, and passed from mouth to mouth in legends which, for many hundreds of years, have circulated among our Celtic ancestors, there is yet a great degree of popular ignorance regarding the fables and realities of this great enchanter. True, several biographies of him have been written, but they have scarcely passed beyond the circle of scholars and antiquaries, who appear to take especial delight in exhausting every subject of study they touch, and keeping to themselves the information they may have acquired.

Within the last few years, however, M. le Vicomte Hersant de la Villemarqué has written a little book,¹ which is certainly well calculated to place its readers in possession of all that is known respecting the real and mythical traditions relating to Merlin. Possessing a knowledge of Celtic literature not common among philologists and antiquaries of his own country, and scarcely equalled in Great Britain, the learned author has, with great industry, brought together information from every possible source, and has thus constructed one of those very few books which never lose their value.

In the following imperfect sketch I shall mainly avail myself of this gentleman's labors, although I have not neglected Geoffrey of *Monmouth's Historia Brittonum*, Heyward's *Life of Merlin*, *Le Compte de la Vie de Merlin et de ses Faiz et Compte de ses Prophecies*

¹ L'Enchanteur Merlin—Myrdhinn—son Histoire, ses Œuvres, son Influence. Paris: 1862.

—a very old work, printed on vellum and contained in the British Museum—and other less important treatises.

The Mythical Merlin.

If we give a sufficient amount of thoughtful study to the legends of the western people of Europe, we find that their source is generally in the mythological stories which, under one form or another, passed current among the ancient Greeks and Romans, and, before their day, among the older eastern nations. Going back to these rich storehouses of legendary lore, we find that there was a god, the grandson of Apollo, and the son of an inferior deity and the chief goddess of magic. This god was born in an island of Italy, where his mother reigned supreme. His name was Marsus. He was thoroughly acquainted with the virtues of plants, compounded remedies from them, and devoted himself to the healing of diseases. He was extensively celebrated for his skill in curing the bites of poisonous serpents. His incantations caused the reptiles to let go their hold, and his saliva applied to the wound immediately neutralized their venom.

From this deity arose a people who were called Marsi, and who possessed, equally with their distinguished progenitor, a knowledge of magic, of the science of medicine and the power to cure serpent bites. Under the Emperors they acquired so great a degree of celebrity that whoever could, without injury, hold a serpent in his hand, or knew how to prevent its biting, or who sold remedies capable of obviating the effects of its wounds, or who made medicines from herbs, or who, in any

manner, followed the profession of an enchanter, was called a Marsus. Thus it was that the serpent came to be regarded as the emblem of medicine—an emblem which holds its place to this day.

In the early centuries of the Christian era, a Marsus in Germany was an enchanter of serpents, and the belief in this power, and the name itself, were common in Gaul during the sixth and in Great Britain during the ninth century. From Marsus are derived Marzin and Marthin, two names given to Merlin in Brittany—Myrdhinn, the Welsh designation, and Martinus, the Latin form, used in the twelfth century. Geoffrey of Monmouth changed this latter to Merlinus, whence come Merlin, the French and English, and Mellin and Meller, the Scotch names. In Brittany a wonder, a miracle or a prodigy, is, to this day, called a *marz*—a word the origin of which is undoubtedly the same as that of Merlin. Relative to this point we are told, in an old Celtic poem, that the being to whom the foregoing names were given, walking along the sea-shore, was met by a Christian, who asked him what he was doing. He replied that he was seeking among the rocks for serpents' eggs; that, like the Marsi, he knew the virtues of plants and was skilled in medicine; that he was a diviner and an enchanter. He then named several of the most wonderful plants, among them the mistletoe, the cress, and the golden thread. His interrogator, convinced of his power, called him Marzin, that is, "the wonderful man," and acknowledged that the God of the Christians alone was more powerful than he.

According to another Celtic legend, a deity, calling himself *Marddin* or *Marzin*, descended from heaven, and becoming enamoured with a beautiful maiden, was born a man, with the honor and virtues of a God. This supernatural personage claimed that he had always lived—that he knew everything—that he had been everywhere—that he knew the past, the present, and the future—that he had the power of assuming, at will, any forms from those of quadrupeds and birds to those of plants and even of stones.

King of the air and of the earth, he was also the sovereign of a subterranean region. All parts of this lower empire were lovely and magnificent beyond everything that the eye of man had ever seen. The rocks were diamonds, the fruits and flowers were incomparably brilliant and luscious, and evolved a perfume of the most delicious and enrapturing character. The inhabitants lived in a continued round of gaiety and pleasure. They were all very small, but admirably proportioned; were blondes, and let their hair flow in ringlets over their shoulders. They rode horses no larger than rabbits. Their food was only fruits and milk; flesh and fish they abhorred. The form of their government was monarchical. Religion they had none—their only worship being the love of truth. But there was one thing wanting in this otherwise perfect country, and that was a ray of sunshine. The darkness, however, was not absolute, but a mild and dreamy twilight prevailed throughout all its borders. *Marzin* was no idle King. He possessed great workshops, in which he labored industriously, manufactur-

ing arms of various kinds. Among those he had made was the magic sword, so celebrated in the songs of the bards.

The origin of Merlin is given somewhat differently in another romance, the essential features of which were adopted by Geoffrey of Monmouth. According to this story, there was a rich man living in England during the reign of Vortigern, who had a wife, a son and three chaste and beautiful daughters. One of the fiends who belonged to that class of the fallen angels which did not go to hell but remained in the air, furious with impotent rage at the advent of Christ, resolved to effect the birth of a semi-demon, who should be gifted with omnipotent power to work evil. The family referred to attracted his attention, and he resolved to accomplish his ends through one of the virgin daughters. He first set himself to work to develop a trifling irritability of temper, which the wife possessed. So wrathful was she, that one day during a slight difference with her son, the lady burst into transports of rage, cursed him and consigned him to the devil. The fiend immediately took possession of his gift, and that night strangled the youth whilst he slept. The mother, overwhelmed with anguish and remorse, hung herself, and the father died of grief.

The three sisters were thus left alone without any other protector than Blaise, a holy hermit, who contented himself with confessing them, imposing a penance, giving them his blessing and then leaving them with all the shields he had thus thrown around them. As might have been anticipated, they were not invul-

nerable against the crafts and assaults of their wily enemy ; who, in order that he might have the youngest to himself, determined to sacrifice the other two. He accordingly induced an old woman to attempt the task of corrupting the eldest, and the young lady, being seduced by the enticing pictures presented to her mind, yielded, was betrayed, condemned, and in accordance with the law of the country against unchasteness in virgins, was buried alive. The second sister, likewise became his victim ; but escaped the extreme penalty by submitting to another ; which, whilst it allowed her to live, reduced her to the status of those whose existence is made up of lewdness and vice.

Blaise, who during these events had remained complacently in his cell, was startled into activity by the younger sister imploring him to save her from the cruel fate which in one form or another had overtaken all her kindred. The holy father might have reproached himself with having been somewhat too negligent of his duty to the other sisters, but there was no time for any such upbraiding ; action was requisite. So he instructed the maiden that she was to go home, to say her prayers, and to take care never to sleep without her candle burning, and without having previously fastened her doors and windows, and having made the sign of the cross on the locks and bolts.

The young girl followed his advice implicitly, and for some time lived in perfect security. At last, however, she was invited by some friends to go to an ale house. Here she forgot herself, became intoxicated, was assaulted by a company of lewd women, led on

by her sister, and finally engaged in a general conflict. Escaping to her own house, she locked and bolted her doors and windows, but forgot to make the sign of the cross over them, and to say her prayers. Throwing herself on her bed, and overcome by the liquor she had drunk, she soon fell into a deep sleep. The ever watchful fiend was on the lookout for his victim. He entered the room with ease, assumed the form of a young man, and accomplishing his long intended purpose, without any hindrance, retired, feeling, doubtless, an amount of self complacency which his perseverance, if it had been manifested in a better cause, would fairly have entitled him to experience.

Blaise had again been defeated, but this time he was scarcely to blame, and when, on the following morning, the unhappy girl related to him how she had disregarded his instructions and that she had reason to believe the fiend had triumphed through her neglect, he gave her his blessing, and promised to do all in his power to save her from either of the punishments which had been inflicted on her unfortunate sisters.

But her troubles were not to be easily dispelled. In time her condition became manifest, she was arrested, her story was disbelieved, and a jury of matrons, without much difficulty, came to a conclusion regarding her, which was probably physiologically correct. The judge was about to pass sentence of death upon her when the good Blaise appeared and entreated for a little delay. He represented that however guilty the mother might be, the unborn child was innocent;

that he believed her wonderful story; that there was some great mystery connected with it which time alone could solve, and, therefore, he asked that the execution might be deferred for two years, during which time the girl should be strictly guarded, and carefully watched. The judge acceded to his wishes and directed that the criminal should be confined in the top-most room of a high tower, with only a woman companion, and that food should be conveyed to her through a window by means of a long rope and a basket.

Thus she lived until in due time a son was born, whose beauty and intelligence excited the admiration of the old woman which was only restrained by the fact that he was covered with black hair, which she could not touch without shuddering. His diabolical origin was thus made abundantly manifest.

It was now that Blaise showed himself to be master of the situation. Having exactly calculated the hour of birth, he was posted at the foot of the tower ready to rob the devil of his own. The child was lowered to him in the basket. He carried him off to the font, baptised him by the name of Merlin, and thus disappointing the hopes of his diabolical father, made him an instrument for good.

As soon as the old nurse had him back again in the tower, she began to reproach him with his infernal origin, and reminded him that so soon as the two years should expire, his mother was to be offered up as a sacrifice to the outraged majesty of the law. Merlin listened to her, raised his head from her lap, looked at

her angrily, shook his head, told her she was a lying old slut, and declared that in spite of all judges and other myrmidons of justice, he would save his mother's life.

As might have been expected, the mother and nurse were somewhat terrified to hear the young infant speak in this very positive manner. But though they crossed themselves, and enjoined him in the name of God, the Holy Virgin, and all the saints that he would tell them who he was, Merlin remained obstinately silent. At the end of six months, however, he yielded so far as to again assure his mother that he would protect her.

When the two years were expired, the mother went to the court with her child in her arms, and confident in the infant's supernatural powers, refrained from making any defence. She was accordingly sentenced to be buried alive. Then Merlin spoke. He assured the judge that his birth was the result of chance, and that neither man nor woman could have prevented it. The judge, however, doubting the validity of this argument, repeated the sentence of death. Merlin was again equal to the emergency. He informed the court that he was the son of a demon of great power, and that through the efficacy of baptism he had been removed from the diabolical influence of his father. He declared that he knew all things past, present, and future, and then carrying the war into the enemy's country, attacked the judge by telling him he was ignorant of his own paternity.

The judge, nothing daunted, told Merlin he was a lying black coward; that his father was a noble

baron, and his mother a lady whom he might see if he desired.

At Merlin's request the lady was brought into court, and after first denying the charge made against her, that her son, the judge, was the offspring of a parson of the town, finally confessed that Merlin was right. His mother was accordingly set at liberty and finally entered a convent of black nuns, where she spent the rest of her days in fasting and prayer.

And now we come to the series of acts which were to make Merlin's name famous for all generations.

The King, who was named Vortigern, had usurped the government, and being in fear of the arrival of the rightful heirs, Æmelius Ambrosius and Uther Pendragon, from Brittany, with a large army, to dispossess him, determined to build a strong castle on Salisbury Plain. The lines were marked out and fifteen thousand carpenters and masons were set to work at the structure. Before nightfall so much progress had been made that a wall of great thickness and breast high had been erected. But the workmen next morning, when they came to resume operations, found, to their dismay, that the wall had been entirely thrown down, and that no evidence of their labors remained, but heaps of stone and mortar. Again and again this happened. Every night the work which had been done through the day was destroyed, and though every effort was made to detect the cause of their discomfiture, all was in vain. As a last resource, Vortigern summoned his enchanters and laid the case before them, and in order to stimulate their science promised

them immediate death if they did not discover why his castle could not be erected on Salisbury Plain.

The astrologers inquired of the stars and discovered that five years previously a boy had been born without the intervention of man, and they declared to the king that in order for him to succeed in his architectural operations, it was necessary for him to find this boy and smear the foundations of the castle with his blood. Still keeping the enchanters in prison, Vortigern dispatched messengers into all parts of the kingdom in search of this boy, in whose existence, however, he had no very great faith. After a long search Merlin was discovered. During his journey to the king he made several prophecies which excited the admiration and astonishment of his conductors, and at the end of the third day was brought before the expectant monarch. In the morning he was taken to survey the site of the castle, and, in answer to the interrogations of the king, declared that below the soil were two deep wells, below the wells two huge stones, and below the stones two large serpents, the one white as milk, the other red as fire. These serpents, he continued, slept all day, but at night they fought, and their efforts to destroy each other causing an earthquake, the walls of the castle were, as a consequence, overturned.

Vortigern caused his fifteen thousand workmen to excavate the ground. The pools were found and the water drawn off. Near them were two huge stones, and beneath them two enormous dragons. As soon as the latter were released from their prison they be-

gan a most terrific combat. The fight is very graphically described and terminated in the complete victory of the white dragon, who burnt up his adversary with a fiery blast from his throat and then disappearing, has never been seen since. The astrologers were pardoned on their confessing that their art had deceived them, and on Merlin's statement that his diabolical father, anxious for his destruction, had so arranged the signs of the heavens as to mislead the conjurers. The castle was now completed, and Merlin became the chief adviser of the king. Finally, Merlin, at the solicitation of Vortigern, explained the mystery of the two dragons. The red one represented the king himself, the white one with his two heads was emblematic of Æmelius Ambrosius and Uther Pendragon, the rightful heirs, who would certainly triumph over him and regain their inheritance. The prediction was in due time fulfilled. The brothers appeared with a large army; Vortigern obtained the assistance of Hengist the Saxon, but the combined forces of the two monarchs were overthrown, the castle, which Vortigern had constructed with so much difficulty, was razed to the ground; the king, his wife, and child banished, and the two brothers were victorious at all points. Æmelius Ambrosius was subsequently killed in a battle with the Danes, and Uther Pendragon was crowned king.¹

¹ In this relation I have followed the abstract given by Ellis in his *Early English Metrical Romances* as being fuller and more graphic than the account by M. Hersart de la Villemarqué. The essential portions are the same in each.

The story of Merlin does not end here. He had many subsequent adventures, in which, however, he generally sided with the right cause. Enough, however, has been said to show the general character of his magical operations. Under Arthur, the son of Uther Pendragon, he reached the summit of his fame. What eventually became of him is not certain. According to one account, which Spenser refers to in his "Faery Queen," he did not die, but fell into a magic sleep from which he will awake after a lapse of many years.

The Real Merlin.

As regards the classical literature of the Greeks and Romans, we have no very great difficulty in determining what is true and what is false. The doctrine of the mythus as expounded by Müller, has given us certain fixed principles which enable us to render all the legends of these people into their ultimate elements, and to separate those which are simply the expression of an idea, from those which are based upon absolute fact. But when we come to the traditions of more recent times, we meet with many disturbing causes growing mainly out of the altered current of thought to which mankind had become habituated. Thus, of what has been said relative to Merlin, a part may be true, whilst a still greater part is obviously pure romance. And yet, unlike the myths of the Greeks and Romans, a substratum of truth underlies the whole, which, though not easy to dig up from the mass of fiction which overloads it, can, with

care, be so separated from the untrue as to enable us at least to give it an air of probability.

About the year 470 or 480 a child was born in Wales, who, at a very early period of his life, gave evidence of possessing great poetic talent. He was called Ambrosius, but on account of the wonderful genius for prophecy and poetry, which he exhibited, the surname of Marzin or Merlin, was given him. His father was a descendant of one of the Roman magistrates who had governed the country, and his mother was a vestal virgin who had broken her vows of chastity. At that time the punishment awarded to a vestal for such an offence was death by being thrown from a precipice. The seducer was beheaded.

It would naturally happen in those days when the marvellous had so strong a hold on men's minds that the mother would avail herself of its advantages to save both her life and her honor. Accordingly, the mother of Ambrosius gave out that her child was the offspring of a supernatural being, and for fear of being regarded as irreligious, the judges respected her plea, and thus her own life and that of her lover were preserved.

At the time of Ambrosius' birth, Vortigern reigned over the country, but having made treaties with the Saxons for the purpose of preventing their ravaging the land—which treaties, as is usual in such cases, the stronger party disregarded whenever it suited them—the people rallied around a gentle but courageous prince named Ambrosius Æmelianus, and he, having been victorious over the enemy in several well fought battles, was proclaimed king.

As was common at that period, the king had his bards, and there being no one more famous in this capacity than the young Ambrosius, then scarcely fifteen years old, he was appointed chief bard of the court, and attached specially to the sovereign. He was soon afterwards baptized, but it is nevertheless quite probable that the feelings implanted in him from his birth remained, and that he continued to venerate the forests, the fountains, the rocks, and other grand and lovely objects of nature, that he did not cease to believe in the existence of spirits in the air, the water, and the earth; that he consulted the stars; that he pretended to a knowledge of the future, and that he practised those magical arts which his predecessors indulged in and against which the church, even at that early day, thundered her fulminations. Christian priests might have said of him as they did of one of his contemporaries, "Although he has been washed in the sacred water, there is nothing of the Christian about him but the name."

A nervous disorder with which Merlin was afflicted served to render his influence with the people much more powerful than it would otherwise have been. This appears to have been catalepsy, or a disease very similar to it. Whilst in the state of ecstasy induced by this affection, he was supposed to be gifted with the faculty of second sight and power to be able to prophecy. It was at such times, doubtless, that many of his poems were recited.

When Ambrosius Æmelianus died, he was succeeded by the famous King Arthur, and Merlin was attached

to this sovereign in a still more intimate relation than that which he had previously occupied. An illumination, contained in a manuscript in the British Museum, entitled *Roman du Quête du Saint Graal*, represents King Arthur standing at the dining table, his queen on his right, and Merlin next to him on the left. The bard is of fair complexion, his hair is long and curling, and his beard comes far down on his breast.

At this time the duties of chief bard were important. He was not only the poet laureate, the prophet, and the magician, but he was the first counsellor, and, moreover, held a commanding position in the army, if he was not really at its head. If his own poem can be believed, he was a prominent personage in a great battle between his countrymen and the Saxons, which took place in a forest in Caledonia. Here, with his long hair waving in the wind, his sword on his thigh, and his harp in his hand, he inspired the Britons both by his courage and his songs, and thus powerfully contributed to their gaining the victory over their more skillful enemies.

But a period was approaching which was to put an end to Merlin's triumphant career. Having conquered his foreign adversaries, Arthur turned his victorious arms against the North Britons, who had revolted from his authority, and who, wishing to make one of their own chiefs king of all Britain, were committing depredations in the south not less terrible than those which the Picts and Scots of an earlier day had been in the habit of perpetrating. In the first campaign,

Hensil, the chief in question, was killed. During the second a dispute arose between Arthur and his nephew Medrod, who not only claimed the crown of his uncle, but demanded his wife also. Medrod disappeared in a mysterious manner, and the bards of the court, and mainly Merlin himself, were suspected of having accomplished his destruction.

About the year 560, when Merlin's hair had, as he expresses it, become "white as the frost of winter," a great battle was fought between Arthur's forces and those of the rebels. This contest took place near the gulf of Solway, on the plain of Arderidd. This fratricidal strife proved too much for Merlin's reason, already weakened by the cataleptic attacks to which he had been subject from early life. At the sight of the streams of blood which flowed from his fellow countrymen of either army, he became insane, and thinking himself beset by furious demons, he broke his sword and fled to the woods, where he determined to live with wild beasts rather than with men who surpassed them in ferocity. Here he spent his time in chanting hymns in honor of the trees and fruits. The peasantry, who are always easily terrified by an unfamiliar object, were afraid of him as he roamed through the forests, his harp in his hand, his head bare, his long white hair and beard streaming behind him, and his body half naked, chanting odes and lamentations of his sad condition. They looked upon him as upon a dangerous animal, and took refuge in the trees when he approached. Then Merlin sang:—

"My eyes are more accustomed to the sight of trap-

pings of gold and lances brandished by kings than to behold the trees of the forests loaded down with black forms like ravens. O, sweet apple tree! O, sacred apple tree! will not an hour come when the swan, flying away, will leave some feathers on the bosom of the lake? My face is withered by weeping, for am I not abandoned by all my best friends? Who recognizes me as I wander among the spirits of the grave? But God will very soon take me to his bosom. The great God will deliver me from all my troubles, and will save me through his Son."

And again:—

"When I mingled with the world I was honored by all men.

"When I came into the palace every one shouted with joy.

"Whenever I sang to my harp the golden fruits fell from the trees.

"All the kings of the country loved me, and foreign kings feared me.

"The poor people in their misfortunes said, 'Sing, Merlin; sing praises.'

"The Britons said to me, 'Sing, Merlin; tell us what shall come to pass.'

"Now that I live in the forests no one does me honor.

"The boars and wolves snap their teeth when they see me pass.

"I have lost my harp, and the trees with golden fruits have been cut down.

"The kings of the Britons are all dead, and foreign kings oppress the country.

"The Britons no longer say me, 'Sing to us, Merlin, of the things which are to come.'

"They call me 'Merlin, the fool,' and throw stones at me."

But although Merlin deploras his abandonment by his friends, he was not altogether without companionship. Taliesin, the most famous of all the British bards, came to comfort him in his distress, and sang to him songs suitable to calm the grief with which he was afflicted, and then Taliesin's sister visited him, and, what is perhaps more correct, the ode which celebrates her arrival and details how she soothed Merlin's troubled spirit, is intended to typify the influence of woman in relieving the sorrows of man. At any rate, Merlin took courage, he called her his sister, his friend, the morning of his day, the refuge of poets, and by this last name leads us to the belief that by his mysterious visitor he really meant to signify the bardic muse.

The conversation between them was long, and at last his companion, seeing that his end was approaching, thus addressed him :

"Oh my brother, thou whose soul is so pure and beautiful, I conjure thee, in the name of God, to receive the holy communion before thou leavest the earth."

But, at these words, the bard, who, till now had yielded to all the requests of his friend, revolts; he calls the monks liars and wicked men, and refuses in these terms :

"I will not receive the communion from the hands of those monks with long robes. I am not of their church. Let Jesus Christ himself give me the sacrament."

And then his companion left him saying : "God have pity on Merlin."

Several others visited Merlin in order to get him to unite himself with the Church, and Saint Columba, the great teacher of the Irish Church, Kentigern, a Bishop of Caledonia, and Saint Kadok, were finally successful in bringing him to confess his sins. The latter set out on his journey in search of Merlin, declaring that he would neither eat nor drink till he knew what fate God had in store for one who sang in this world as the angels sang in heaven. As he slept at the end of his first day's journey, he heard in his dreams, a voice saying, "pray for me, pray for me, and do not cease praying till I sing eternally the mercies of the Lord." These words encouraged Saint Kadok, and he set out with renewed ardor in search of the great poet of his race. As he went through the woods, ringing a bell to keep off bad spirits and dangerous animals, Merlin started up from his sleep and attempted flight. Saint Kadok adjured him in the name of God to stop and listen to him. The fugitive obeyed, and chanted the ode already cited. Touched with compassion, Saint Kadok replied :

"Poor dear innocent, return to the God who died to save you. He will have pity on you. He gives support to those who put their faith in him."

Merlin answers :

"I have always confided in him, I confide in him still, and I ask for his pardon."

Saint Kadok replies :

"And I give thee thy pardon in the name of the Father, the Son, and the Holy Ghost."

And then the bard utters his last notes :

"I raise a cry of joy in honor of my King, man and God combined. I will sing of his mercies through ages to come and in the eternity beyond the ages."

But notwithstanding that he had made his peace with God, the savage inhabitants continued to persecute him, and on the evening of the day that witnessed his conversion he was found dead on the bank of a river. Some shepherds of the Picts had stoned to death the noble bard whom they called the "fool."

"Thus," as M. Hersart de la Villemarqué—whose account I have hitherto almost literally followed—remarks, "appears to have perished a man whose history is scarcely better known than that of other celebrated poets who have passed from the earth. To cite but two famous names, have Homer and Lucretius been more highly favored than Merlin, and is not all that is asserted in regard to them simple conjecture?"

But Merlin's influence did not end with his life. Like every other truly great man, his power continued long after death, and throughout Britain was felt, when the real events of his history were nearly all forgotten. Legends and romances were constructed upon the slender type of truth which the composers had at their command, and others in which he played a prominent part, were fabricated altogether. That these stories were beneficial to the national literature and character, cannot be doubted. They told of noble deeds performed by brave men, of sacrifices by holy and virtuous women, and almost invariably made frankness and goodness triumph over deceit and wickedness. They have been the means of giving to English

literature some of its most glorious themes, and have handed down from generation to generation the love of fair play, contempt of danger, and boundless hope, which distinguish the Anglo-Saxon race wherever it is found.

The Pathology and Treatment of Organic Infantile Paralysis.

By WILLIAM A. HAMMOND, M.D., &c.

The form of paralysis occurring in young children, and which I design considering in this memoir, is that which Rilliet and Barthez¹ have described as the *Paralysie essentielle de l'enfance*, and to which Duchenne² has given the name of *Paralysie atrophique graisseuse de l'enfance*. Previous to the writings of these authors, the affection in question was not distinctly recognized as a separate disease, but was confounded with a much less serious disorder. Thus Dr. West³ described it tolerably well in a paper on the paralysis of infants, but regarded it as a variety of a disease which appeared under two other forms, one of which was congenital, and the other of cerebral origin. Both the latter, were not, in his opinion, of any serious character. The other, which was much more severe, occurred generally in debilitated children, and without exhibiting symptoms of any disorder of the brain.

¹ *Traité clinique et pratique des Maladies de l'Enfance*. Paris, 1853, t. II, p. 335.

² *De l'Electisation localisée*, etc. Paris, 1861, p. 275.

³ *Medical Gazette*, Sept. 8th, 1843.

Recovery was often only partial, and though the general health sometimes became robust, the affected limb remained powerless and wasted away.

Dr. Kennedy¹ wrote two very excellent memoirs on a form of temporary paralysis, to which he had observed children to be liable. This came on very suddenly and disappeared in a few days under appropriate treatment.

Dr. Handfield Jones² has recently related the details of several cases of this temporary paralysis, and a number of similar ones have been under my own charge. All recovered under the use of strychnia and iron, combined with mild faradaic currents applied to the affected limbs.

Duchenne, in the work to which reference has been made, describes the affection, now under notice, with much minuteness, both as regards its symptoms and pathology. As the name he gives it indicates, he considers it to consist essentially in atrophy of the muscles, attended with fatty degeneration. That this latter is almost always the condition of the muscles, I am very sure; at the same time, my experience leads me to the conclusion that the conversion of the muscular tissue into fat is not a necessary accompaniment. Not long since, I related³ the details of several cases of this disease, and stated that I was disposed to regard it as

¹ "Dublin Medical Press," Sept. 29, 1841, and "Dublin Quarterly Journal of Medicine," February, 1850.

² Clinical Observations on Functional Nervous Disorders. Am. edition, 1867, p. 92.

³ On the Treatment of a Certain Form of Paralysis Occurring in Children, NEW YORK MEDICAL JOURNAL, December, 1865, p. 168.

an affection in which the muscles become atrophied and lose their irritability without necessarily undergoing fatty degeneration. Further experience has confirmed me in this opinion. As a rule, however, there is no doubt of the correctness of Duchenne's view in relation to the pathology of the disease.

According to this author, the principal phenomena which characterize what I have designated organic infantile paralysis, are paralysis, atrophy, and in some muscles a more profound lesion—fatty degeneration, or substitution. The fact that Duchenne himself thus admits that this last condition is not invariable, is a serious objection, even if there were no others, to the term which he has applied to the disease. Its length and the difficulty of rendering it into ordinary English, have aided in inducing me to propose the name which stands at the head of this article.

Organic infantile paralysis is generally preceded by febrile excitement and pain in the back. This pain marks the seat of the disease of the spinal cord, to which the paralysis of the muscles is due. What the exact character of this spinal affection may be, cannot generally be determined. In one instance, when I had the opportunity of making a post mortem examination and of inspecting the condition of the cord, I found a cicatrix partially filled with a very small clot. The paralysis in this case was situated in the left lower extremity, and had begun four years previously. The lesion existed in the lower part of the dorsal region, in the left anterior column.

In some cases, doubtless, the membranes of the cord,

only, are affected, and the condition may be one of simple congestion or of inflammation, which generally appears in a chronic form. In others the substance of the cord is diseased. When the disease of the cord or its membranes, wholly or in part disappears, so long a time has generally elapsed, that the contractile power of the muscles is lost, atrophy has begun, and fatty substitution is often going on. The affection is then entirely muscular. The nerves are not apparently impaired in the integrity of their functions; sensibility is not materially, if at all, lessened. There is simply mal-nutrition of the muscles, not due to any inability of the nerves to transmit impressions, but to the fact, that from central disease, the proper stimulus has not been sent through the nerves of the affected parts to the muscles, for so long a time, that the latter, having lost the power of being excited by their natural motor influence, are incapable of recovering their tone and healthy condition.

Very early in the course of the disease, the electric contractility of the affected muscles is abolished. When the poles of an induction coil are applied to a healthy muscle, contractions are produced. But, very soon after the appearance of organic infantile paralysis, this faculty begins to fade, and in the course of a few months is altogether lost in some of the muscles—not in all, for it generally happens that some one or more can be excited to contractions by strong induced currents. The power of the will is always lost over those muscles in which the electric contractility has disappeared.

Atrophy takes place on account of deficient nutrition, in consequence of the original spinal disease. A less amount of blood flows through the muscles of the affected limb than through those of a corresponding member which may be healthy. The muscles gradually waste away to mere cords of cellular tissue; the muscular tissue is absorbed, or, as is generally the case, is replaced by fat.

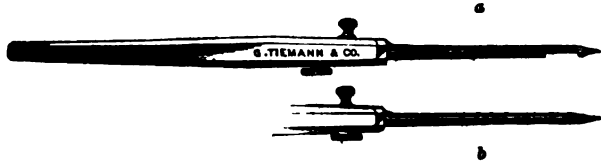
Along with these changes, there is always a reduction of temperature in the affected parts. This sometimes amounts to as much as eight or ten degrees, though generally it is not more than five. If, under the use of appropriate means, improvement takes place, the first indication is shown by the return of the temperature towards the natural standard. It thus becomes important to have some means by which a very slight increase of heat may be noticed. For this purpose I use Becquerel's discs, which are placed in communication with a galvanometer. These discs consist of a very thin plate of copper about the size of a half dime, soldered to a thin rod of bismuth. This latter is contained in a small tube of hard rubber, furnished with a handle. The discs are two in number. One is placed on the sound limb, and the other on the corresponding part of the paralyzed limb. Both are in connection by delicate silk covered wires with the poles of a galvanometer. If the temperature of both limbs be the same, the needle of the galvanometer remains quiet, if either be warmer than the other, the needle is deflected to the north or south, according as one or the other limb has the higher

temperature. By this apparatus, very much less than the hundredth of a degree of temperature can be determined with absolute certainty.

It is also exceedingly important to ascertain the condition of the muscles as to fatty degeneration. For if this process has advanced to any considerable extent, the difficulty of effecting a restoration is much increased. No means of arriving at a correct conclusion, in regard to this point, is at all comparable to a microscopical examination of the suspected tissue. Duchenne has devised a small trocar, which admirably answers the purpose of extracting a minute portion of the muscle without causing any more pain or disturbance than that induced by the prick of a needle.

The instrument is shown in figure 1. It is intro-

FIG. 1.



duced open, as at *a*. When it is well in, the small button, at the under part of the handle, is pushed forward. This propels a half cylinder of steel against the shoulder, at the end of the trocar, and thus a small piece of the muscle is detached and caught in the cavity. The lower figure *b* represents the instrument ready to be withdrawn. By drawing the button back, the bit of fibre can be taken out, and is then ready for microscopical examination.

The muscles of a part affected with organic infantile

paralysis, are very interesting subjects for study, and their examination should not be neglected in any case of the disease where there is hope of being able to effect a cure. Indeed without this examination, it is often impossible to give any definite opinion upon the subject. If the muscles are, to a very great extent, replaced by fat, it will be almost impossible to bring about a cure; if, on the contrary, such substitution has not taken place, or if it has only progressed to a comparatively slight extent, a cure may be safely promised. The absence of electric contractility will not determine the point, for this disappears long before the change begins in the muscle. Occasionally, as I shall show hereafter, the muscular fibre preserves its state of histological integrity.

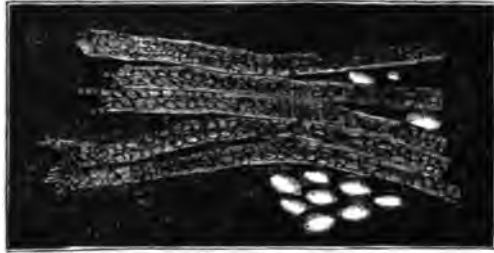
The progressive character of the morbid process is well shown in the accompanying cuts. Figure 2 represents a portion of the upper part of the tibialis anticus muscle of a boy who had suffered from organic infantile paralysis for over two years. Oil-globules are seen along the course of the fibrillæ, these latter are irregular and torn, and the transverse striæ are becoming dim.

FIG. 2.



In figure 3, a still more advanced stage is shown. This cut represents a portion of the same muscle taken from the lower part. The transverse striæ have nearly disappeared, oil-globules are seen in large numbers, and fat-corpuscles are also abundant.

FIG. 3.



In figure 4, the progress of the disease is well shown. The lower margin of the specimen is a mass of fat globules, and throughout the whole, the transverse striæ are absent.

FIG. 4.



In figure 5, a portion taken from the same muscle one month after the preceding specimens were removed, is shown. The transverse striæ are entirely gone, and the muscle is a mass of oil-globules and fat-vesicles.

FIG. 5.



Figure 6, represents a piece of the same muscle six weeks later. It is now nothing more than a mass of connective tissue, the fat being almost entirely absorbed, no transverse or longitudinal striæ are to be perceived.

FIG. 6.



But as I said, there is not this necessary degeneration in every case of organic infantile paralysis. In two cases, which had lasted over four years, and which were clearly due to spinal disease, I found the structure of the muscle unchanged. There were atrophy, loss of electric contractility, and reduction of temperature; but every specimen of the affected muscles that I examined showed no change from the normal character. In every other respect, the symptoms were similar to those observed in ordinary cases of the dis-

ease. Improvement was very slow, but finally every muscle, except the rectus femoris in one, and the tibialis anticus of the other, recovered, and the children were enabled to walk. The affection in both cases was confined to the left lower extremity.

I am hence led to the conclusion that fatty degeneration, though the ordinary result of organic infantile paralysis, is not an invariable consequence.

The treatment of the disease consists in the use of general and local means. Of these, the latter are of much the greater importance, especially after the spinal affection has in a manner subsided, and the disease is chiefly manifested in the paralyzed condition of certain muscles.

During the acute stage, there is nothing of so much efficiency as rest in bed. I know of no medicines which are capable of producing any specific action on the spinal cord at this time, and even after the spinal affection has become more chronic, the means mainly to be relied upon are those which are applicable to the local trouble of the muscles. It is to these, therefore, that I shall particularly ask attention.

Strychnia is useful, because it is capable of acting as a general stimulant to the nervous system, and is, moreover, a tonic to the muscles. I generally prescribe it in union with iron and phosphoric acid, according to the following formula: *R. strychnia, grs. 1; ferri pyrophosphatis ʒss, acidi phosphorici diluti ʒss, syrupus zingerberis ʒiiss M. ft. mist.*

Of this a teaspoonful may be given three times a day to a child of four years old or over; half the quantity will be enough for a younger child.

The immediately local means of treatment are those which are calculated to promote the nutrition of the muscles, and restore or augment their contractile power. The first end is to be obtained by causing a greater amount of blood to flow through the diseased parts. The second is best effected by the persistent use of electricity and active and passive exercise.

Under the first head are embraced heat, frictions, and kneading.

Heat is best applied by means of hot water. A temperature of from 110° to 135° may be used and the limb should be thoroughly immersed and allowed to remain so for half an hour; salt may be added to the water, with the view of augmenting the stimulant effect. I think heat thus applied is more efficacious than when it is used dry. The pores of the skin are more thoroughly opened and the tissues softened.

Frictions with a dry towel, a flesh-brush, or the hand, are also exceedingly useful. They should be practised several times in the course of the day, to the extent of reddening the skin.

Kneading the muscles affords a means of exercising them, and of increasing the amount of blood in the vessels. They should be pinched firmly between the fingers of both hands to the extent of producing some little pain. Under this operation, they often lose their flabbiness and become firm and hard. Half an hour, morning and evening should be employed in this way. Under the second head are embraced the more effectual measures for restoring the diseased muscles to their normal condition, and electricity ranks first among them.

As generally used in this country, little or no benefit attends the use of this agent. It is either applied in too weak a form, or it is employed in a manner not at all calculated to do service. I have seen the current from an induction apparatus passed through the body of the operator and brought to the affected limb by his fingers being lightly passed over the skin, and I have also witnessed what is called, "galvanizing" the patient, performed by the poles of the machine being held in the hands. When the agent in question is to be used, the current should be applied in such a manner as to localize it in the affected muscles, after the manner so thoroughly elucidated by Duchenne. This requires an accurate knowledge of the anatomy of the parts concerned.

Wet sponges are to be fastened to the electrodes, the skin is to be well moistened, and the contact of the sponges with the skin is to be made over the points of origin and insertion of the paralyzed muscles, each being taken up in turn. In this way the current is made to pass through the diseased parts more effectually than it would otherwise do. To perform the operation with the necessary completeness, if an extremity is paralyzed, at least an hour is required for each *séance*, two or three times a week. When I employ the induced or faradaic current, I make use, generally, of a machine which consists of Farmer's thermo-electric pile as the generator of the electricity, and Kidder's induction coil. I know of no other induction apparatus which is so convenient and so effectual as this. It is only necessary to attach it by a flexible

tube to a gas burner, and to turn on the gas and light it. In a few seconds the current is in sufficient quantity and intensity to set the vibrating part in action, and by drawing out the cylinder in the end of the box, the power may be increased to any requisite extent.

But there are many cases of organic infantile paralysis in which the induced current fails altogether to cause the slightest contraction of the muscles, no matter what degree of power is employed. That these cases are not those in which the muscular tissue is entirely converted into fat, is very evident, both from microscopical examination and from the effects of the constant galvanic current in causing motion.

Before the introduction of the faradaic current into practice, the direct current was used with success by Humboldt, Aldini, Majendie, Nysten and many others, and even after the discovery of the principle of induction, it was preferred by some practitioners. In this country Dr. Dewees¹ of this city insisted upon its advantages.

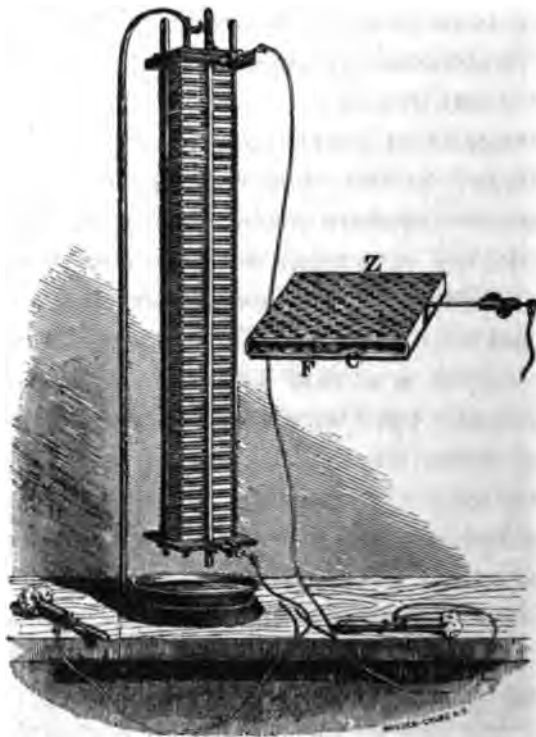
Remak long contended for the superiority of the direct galvanic current over the induced or faradaic, but Duchenne, on the other hand, was equally strenuous for the latter, and appears, so far as England, France, and this country are concerned, to have carried a majority of the profession with him.

In the *NEW YORK MEDICAL JOURNAL*, for November 1865, I gave the details of three cases of organic infantile paralysis, in which the direct current had

¹ *New York Journal of Medicine*, May and July, 1847.

excited contractions when the induced current entirely failed to produce this result. I then briefly described the instrument I had devised for the purpose. As many inquiries have been made, with regard to this apparatus, I subjoin a figure which represents it accurately.

FIG. 7.



It consists of a series of elements formed of plates of perforated zinc and copper, as shown at F. These plates are soldered together, the copper being bent over at the ends, the zinc laid upon it, and the two securely

fastened. A thin piece of wood is then placed between the plates to prevent their being pressed together. The elements rest upon a plate of hard rubber, and are kept in place by four hard rubber rods. Two other plates of hard rubber, having each a large hole in the centre and four holes for the rods, rest on top. These are kept in place by pins which pass through holes in the rods. The whole is hung to an iron or brass support, as shown in the figure, and a saucer underneath catches the vinegar used to set the instrument in action.

To arrange the apparatus, an element with a copper wire soldered to the copper plate, is placed upon the lower piece of hard rubber; upon the element, a piece of flannel, or woolen cloth the same size as the element, is placed; upon this another element, then a piece of flannel, and so on. The elements are so placed that the copper is always below. The last element has a piece of copper wire soldered to the zinc plate. Insulated wires are used to connect the poles with the electrodes.

To set the apparatus in action, strong vinegar is poured upon the top. It passes through the elements and moistens the flannel. If the plates were not perforated, the flannel would only be moistened at the edges, and thus a great loss of power would be the result.

Copper gauze may be used instead of perforated copper plates.¹

¹ Messrs. Chester, the eminent electrical instrument makers, 104 Centre street, New York, manufacture my batteries.

To use the instrument, the electrodes having wet sponges fastened to them, are placed on the skin over the affected muscle. As soon as contact is made, a contraction of the muscle takes place. When the current is broken contraction again occurs. The connection should be made and broken as rapidly as possible, for contraction does not take place if the current be continued without interruption. I have a little mechanism working by another battery, which makes and breaks the connection with great rapidity.

I have never, in the course of twenty-two cases of organic infantile paralysis treated in this way, found one instance in which this instrument failed to make muscles contract, which would not do so upon the application of the strongest induced current. That it acts, even upon cases in which fatty degeneration is progressing, is shown in the following cuts.

Figure 8 shows the appearance of a portion of muscle as examined by the microscope, October 21st, 1866.

FIG. 8.

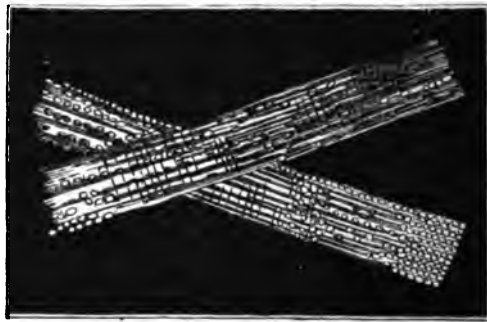


Figure 9, represents a piece of the same muscle from the same part in December 3rd, six weeks after treatment. In the first, oil-globules are seen to have displaced the muscular tissue to a great extent; the transverse striæ have disappeared entirely from some parts, and are faintly seen even where they are present. In the second, the quantity of fat is perceived to be very much lessened, and the striæ are much more numerous and distinct. This case, which was one of paralysis of the left leg and foot, entirely recovered.

FIG. 9.



After the power of the will is to some extent restored over the muscles, the induced current may be used with more advantage than the direct.

The intensity of the current, generated by the instrument I have described, is very great. It should not, therefore, be applied to any part of the body to which the fifth pair of nerves is distributed, as the retina may be injuriously excited and even blindness be produced. The induced current has no such effect.¹

¹ In a note to the Lecture on Facial Paralysis in the English translation of Trousseau's *Clinique Médicale*, Dr. Bazire states that this power of the direct galvanic current to excite muscular contractions, when the induced current fails to do so, was noticed in Germany in 1864. Dr. Bazire quotes my cases, already alluded to, and states that Mr. Radcliffe and himself have observed the fact to which I have drawn attention.

Along with the galvanism, passive motions of the joints should be made, and the child should be encouraged to direct the will to the affected muscles as often and as powerfully as possible.

In a subsequent paper I propose to relate the details of the cases of organic infantile paralysis which have come under my notice.

SELECTIONS AND TRANSLATIONS.

Aberrations of the Sexual Instinct.

THE sexual instinct is one of the strongest forces for good and for evil. Its good effects are seen in happy family life, and a house full of healthy and creditable children. Its ill effects! Whatever things are done by men and women that are incomprehensibly foolish or criminal, there we may predicate that an aberrant or unsatisfied sexual feeling lies at the bottom of the mischief. It is, we believe, for example, the chief origin of the secret drinking of respectable women.

Such an instinct deserves careful study, and we shall venture to lay before our readers an attempt at a compendium of the subject, viewed from a natural history light. The propositions laid down in the Marriage Service of the English Church seem to embody the common sense of the matter, wherein they state that marriage is ordained for three purposes—(1) the procreation *and* the due education of children; (2) the avoidance of incontinence; (3) the mutual society, help, and comfort of the married pair. Any union of the sexes in which provision is not made for fulfilling every

one of these purposes, may be proved contrary to natural law, using that word in its widest sense.

Aberrations of the sexual instinct may consist, 1st in tendencies to sensual gratification without any union of the sexes, as in the "besetting trial of our boys," &c.; 2ndly, in union of the sexes without due provision for the ends for which such union was intended—viz., in casual and temporary union, of which *infanticide* is the necessary result; 3rdly, in marriages artificially barren, for which, as Dr. Storer and Mr. Hepworth Dixon testify, America is gaining a bad prëeminence; 4thly, there are aberrations of a more innocent character, because often forced upon individuals by a wrong moral or political condition of society, amongst which we may include *androgynism*, if so awkward a word may be taken to mean the intrusion of either sex, voluntarily or not, into the province of the other; to-wit, when a woman dissects a dead body, or a man measures a young woman for a pair of stays. To which may be added the many strange and fantastic modes of relation of the sexes—Free Love, Pantagamy. &c., &c.—which Mr. Hepworth Dixon shows us in his work on New America—and the Manichean notion that the union of the sexes is in itself sinful.⁽¹⁾

(1) "All things in the world are said in some sort to seek the highest, and to covert, more or less, the participation of God himself. Yet this doth nowhere so much appear as it doth in man, because there are so many kinds of perfection which man seeketh. The first degree of goodness is that general perfection which all things do seek in desiring the continuance of their being. All things, therefore, coveting as much as may be to be like unto God in being ever, that which cannot hereunto attain personally doth seek to continue itself another way—that is, by offspring and propagation."—*Hooker, Laws of Eccl. Pol.*, i. 5, 2; Keble's ed., vol. i, p. 216.

I. To begin with the first aberration. That it exists is enough for us. The extent of its prevalence is impossible to compute. Some men who have seen much of it, think it very common, and *vice versa*. That its effects are bad, no one doubts, but as to their gravity, considered quantitatively, there is, perhaps, exaggeration. Men who see nervous diseases believe it to be a frequent cause of those diseases. On the other hand, it seems to many of us that this is only another way of saying that persons of ill-conditioned nervous systems are prone to the aberration in question. If it be so common, as is sometimes alleged, it can hardly be so hurtful, or so difficult to abandon. One of the worst effects we have seen is that kind of hypochondriasis which afflicts young men who believe themselves the subjects of all sorts of incapacities and diseases which they read of in the advertising columns of newspapers. But then it requires no physical sin to produce this. When chastity is imperfect—that is, whenever young persons allow their minds to dwell on sexual ideas, and forget that the voluntary mental indulgence in ideas is in itself a sin, though followed by no physical act—then the reactions of an overstrained nervous system may lead to hysteria, hypochondriasis, etc., in male or female.⁽¹⁾ To return, however, to the “besetting trial,” etc. That it exists is certain, be its quantity or effects much or little. What are the causes and remedies? The causes may be purely physical. We have seen the habit frightfully developed

(1) See, on this point, Bayle St. John's “Life in a Levantine Family.”

in a rickety, large-brained child of two, from ascarides and eczema. It was got rid of by hygienic treatment, with circumcision. We have known of some cases in early adult life, which began from similar causes. In more instances, perhaps, it begins by vicious example. But we cannot conceive of any boys of ordinary intelligence, or who mix with older and worse boys and hear their talk, who would not recognize it as a sin. Now for the remedies. We are sure that the Rev. Dr. Pusey and Dr. Meadows agree in every word that Dr. Beale and the Rev. Mr. Thring adduce in favor of the preventive effects of muscular exercise, open air, cold bathing, and other modes of promoting honest, up-looking, open-faced habits of mind and body. Then there is the silent discipline, which guards against opportunities. Thirdly, considering the tender age at which there is a possibility of the sexual idea entering the mind—full ten years before, in our civilized and crowded state, there is any ordinary hope of marriage—we hold it to be the duty of every parent, in delicate terms, to warn his children, before leaving home, against listening to nasty and prurient suggestions. He may fairly appeal to the boy's self-respect, and to the credit and purity of his home, and the precepts of temperance, soberness, and chastity, but in the quietest and least exaggerated way. Up to this point, we believe, too, that all parties are agreed. All parties are agreed, too, on the general good influence of sober religious feeling. But as to the question whether a special religious rite, such as confession, requiring for its efficacy a special mode of training, and special

articles of faith in the recipient, is to be recommended or not—that is no question for a Medical journal. But we will venture to say that a self-reliant, self-respecting system, which inculcates resort to a spiritual adviser only in grave emergencies, and not as a matter of habit is that which seems most suitable to the English. Other systems may or may not suit other people.

To complete this summary of selfish sensualities, we need only allude, in passing, to those dark crimes which, as the law says, are not to be named of Christian men, and which are shortly catalogued in the Epistle to the Romans, Casper's "Medical Jurisprudence," Gall and Spurzheim's "Phrenology," etc. They illustrate the dangers of unchaste thought, even without unchaste act. The man who gives reins to his thoughts may find his thoughts run away with him. The laws of habit, as regards chaste and unchaste thought, cannot be too sedulously inculcated on young persons.

II. *Incontinence and Infanticide*.—These we class together, as necessary accompaniments in a society where Christian shame has influence, and where unchastity is looked on as equivalent to want of character. Man and woman who run the risk of introducing homeless and nameless infants into the world—whom they dare not own or shelter publicly—are infanticides by omission, if not by intention. We give due honor to the Harveian Society for attempting the problem; but all their labor and ingenuity only serve to show the impossibility of protecting infants whose natural protectors are their natural enemies. Incontinence in woman is much a matter of race, of education, of the

opinions of her daily associates, of opportunity, of mental training and character. Women of the Celtic race in their original abodes, not transplanted to towns, seem singularly virtuous, spite of the worst overcrowding and mixture of the sexes. What room in a London lodging equals the Highland or the Breton cottage, or, we may say, the dwelling of any primitive race under heaven? To assume that overcrowding and want of privacy are causes of incontinence *per se* is to say that continence is unknown amongst such races; but in towns, away from home associations, amidst a more stimulating existence, these conditions give both inclination and opportunity. Amongst large masses of the lower orders of Englishwomen neither is incontinence considered any harm, nor the getting rid of the child, born or unborn. "So the baby is dead," we said the other day to a poor married woman who was "nursing" her sister's child. "And a very good job too," was the reply. "*Quid vanæ leges sine moribus?*"

Where such are the sentiments, legislation against infanticide is vain. For one child that is killed, hundreds are let die, in some decent tedious way; gruel or bread pap made with water and coarse sugar will in no long time make the child fit for "the Lord to take it." Shut up the mother in a Workhouse for four months; can you make her suckle her child? No; she will starve it, if she chooses. A great State Foundling Hospital would be a perilous experiment; if tried, it should be supported by a tax on unmarried men. Private benevolence can do as it lists. The women in certain districts of Eastern Scotland and of England

are frightfully unchaste. Poverty is not the chief cause: for in manufacturing towns young girls earning high wages habitually treat soldiers or keep men as paramours. Amongst the families of the wealthy, especially in towns, there is often a want of discipline; young female servants are allowed to "go out," and so fall into bad company. We know thoroughly well that amongst certain classes a woman thinks it no sin to give the last privileges to any one who promises to marry her. The main causes of incontinence in women may be summed up in want of self-respect and self-control, and want of insight into the heinousness of the offence, whether in a religious or natural history view. We have often said to a girl "in trouble"—See what you have done? You have let yourself be the means of bringing into the world a poor child, with no father to own it, no home for it, a thing to be kicked and scouted as a bastard; does even a bird or a beast have young ones without a mate?—without preparing a nest, and lining it, to protect the young, and doing her best to feed them? So we say to young men—do not pretend that nature prompts you to sin. "Nature" requires that the woman to whom you unite yourself should be protected and nursed in the troubles of childbirth; that the infant should be reared as becomes your son, and not be left kicking about the world. If "nature" requires you to run the risk of having a child, "nature" requires you to provide for it. Incontinence in man is in this country kept up by an unwritten code of immorality, whose force is greater at present than that of any Christian teaching which

reaches the multitude. Neither are our young men taught early enough to look forward to, and work and wait for, the comforts of a suitable marriage and healthy offspring. They rather look forward to sowing their wild oats with loose women, and sobering down and living respectably another day. Then statisticians set to work to ponder on the extinction of noble families, and moralists pretend to wonder at the aberrations of wives who have married these sapless sticks.

III. Let us turn to an aberration of the sexual instinct more natural and detestable still, such as results in marriage without the fruits thereof. The man and woman desire the gratification of each other's society, but refuse the task which nature imposes of rearing the offspring which ought to result from this association. Such is the curse which luxury and the worship of godless intellect inflict on their votaries. We need not refer to the ill-repute of the French for the small number of children to every marriage.⁽¹⁾ It would

(1) Mr. Beresford Hope, M. P., in a speech at an agricultural meeting in Kent, said:—"It is a thing almost too dreadful to say, but I believe that the diminution of the population of France is a great deal owing to the fact that the parents don't like to see their land cut up into nothing, and, accordingly, we have families of three and four children only. Why only three or four? It is a dark mystery. Certainly human nature is human nature; but the maternal nature and the paternal nature are steered in France to the desire of seeing many rosy infantile faces round their hearths. That is a known fact, and there are things which cannot be spoken of except very guardedly, and only in meetings of men, and I believe a great deal of it is attributable to that infamous system of the necessary division and subdivision of land and property among all the offspring. Marriages become a mere matter of bargain: the man has a third of his father's property, and the woman he takes to wife has a third or a quarter of a half of her father's property; and so it is simply a union of two misbroken halves put together. Sons' sons go on making

be more astonishing to find such a stain upon moral New England, were we not aware that though the smaller and better part of the Americans have a real affection for the mother country, yet that the great majority are infinitely more French than English in tastes and predilections. Our readers know already that Dr. Storer and other New England Physicians have felt it necessary to lift up their voices against so gigantic an evil. (*) See, for instance, Dr. Storer's book

these sorts of marriages, and thus you see how this villanous system poisons the very birth-springs of human life and human morality in every shape; and it is what we are to come to—equal division of land and universal suffrage. France got an equal division of land seventy years ago, and universal suffrage nineteen years ago. . . Freedom to make your money, freedom to spend your money, freedom to buy land, freedom to sell land, freedom to marry, freedom to make your will, freedom to travel, freedom to breathe, freedom to worship your God as you like, freedom in all things, with order and due subordination everywhere—(cheers)—that is the English system."

(*) "*Population in Massachusetts.*—Dr. Allen, of Lowell, has been investigating the changes in the population of Massachusetts, of which State he says that, in thirty or forty years, the native-born will be a minority. His figures show, not merely that the foreign population of the State increases more rapidly than the native, but that in fact the native population is diminishing year by year, and the increase is altogether foreign. In 1864 the births in the State were 80,449, and the deaths 28,728; in 1865 the births 80,249, deaths 26,152. The births exceeded the deaths in 1864 by only 1726, and in 1865 by 4097. But the foreign population have from two to three times as many births as the American, and it follows that the American deaths actually exceed the births. This is confirmed by the figures from towns where there are few or no foreigners, and the deaths every year exceed the births. Is the old Puritan stock losing its virility and running out? The town records show that in the first generation of settlers the families averaged from eight to ten children; in the next three generations from seven to eight; the fifth about five; and in the sixth less than three. The present is less than this. The old physicians all notice this falling off, and it is remarkable that it is quite as large in the country as in the city. Does it come from our more artificial and unnatural life, producing a degenerate physical condition of women, or from a settled purpose with the married to have but few children? These

entitled "Why Not?" ⁽¹⁾ Unluckily the thing is not confined to Medical books. Mr. Hepworth Dixon, in that wonderfully interesting work entitled "New America," ⁽²⁾ has gone into it without mincing matters. Writing at Providence, Massachusetts, [Rhode Island] he speaks of "a strange and wide conspiracy on the part of women in the upper ranks—a conspiracy which has no chiefs, no secretaries, no head-quarters, which holds no meetings, puts forth no platform, undergoes no vote, and yet is a real conspiracy on the part of leaders of fashion among women."

And for what? Simply for the worship of self, for the enjoyment of all the luxuries of life, for the gratification of sense and intellect, but without the trouble of rearing children. There is no secret affected about the matter. Young fashionable American women say they won't have babies, "in pious Boston and Philadelphia, no less than in wicked Orleans and New York. It is an offence to allude to the nursery—to wish a young mother a return of the christening day." And they justify themselves.

"A woman's first duty," said one of Mr. Hepworth Dixon's lady friends, "is to look beautiful in the eyes of men, so that she may attract them to her side, and exert an influence over them for good; not to be a household drudge, a slave in the nursery, the kitchen,

are some of the questions raised by Dr. Allen. The facts deserve the attention of students of social science."—*Springfield Republican*.

⁽¹⁾ See *Medical Times and Gazette* for 1866, vol. ii, p. 479.

⁽²⁾ Published by Hurst & Blackett, 2 vols., 8vo, 1867. See vol. ii, p. 265, &c.

and the schoolroom. Children take up the mother's time, impair her beauty, and waste her life. If you walk down these streets" (those of Providence), "you will notice a hundred delicate girls just blushing into womanhood; in a year they will be married; in ten years they will be hags and crones; no man will care for them on the score of beauty: their husbands will find no bloom in their cheeks, no lustre in their eyes; they will have given up their lives for their children."

Of course this state of things tells upon the population.

"The only States," says Mr. Dixon, "in which there is a healthy rate of natural increase by birth are the rude Western ones. In Massachusetts, the religious centre of New England, the intellectual light of the United States, the young women marry, but they seldom have children. The women have made themselves companions to their husbands—brilliant, subtle, solid companions. At the same time the power of New England is passing over to the populous West, and a majority of the rising generation of Boston is either of Irish or of German birth."

That a state of things is an aberration of the sexual instinct, which sets aside the main end of sex itself, is clear, and it seems to have its root first in selfishness—in the desire to enjoy life without trouble; but it is greatly aided in America by that other sexual aberration, which seeks to put the sexes on an equality and identity so far as possible. Hence too great a stress on the intellectual, and too little development of the nutritive functions, in the American girls (in the

Eastern States, not the Western). "They have," said a friend to Mr. Dixon, "no bone, no fibre, no juice; they have only nerves. But what can you expect? They eat pearlash for bread, they drink ice-water for wine. they wear thin shoes, tight stays, and barrel skirts. Such things are not fit to live; and, thank God, in a hundred years not one of their descendants will be alive." There is no truer instinct than that which leads men to admire a deep and well-formed female bosom. It typifies the calmness, the graciousness, all that is bland and bountiful in maternity. But big foreheads, flat bosoms, skinny legs, sharp features, coarse voice, and a strong taste for criminal statistics, are the true type of the "woman's rights" system. Many attempts have been made to introduce this accursed system of limited families into England; radical and philosophical politicians advocated it years ago; but, thank Heaven, we think that no English Physician would countenance it. We hear of it sometimes in private practice; ladies say, "I am having children so fast—can nothing be done save separate beds?" We do know instances in which some experiments were made, which nearly maddened the wives subjected to them; but the heart of English society is sound.

IV. Lastly come we to a miscellaneous set of sexual aberrations, some arising out of unhappy social circumstances, some from wild political or religious opinions. Here we cannot help remarking how intrinsically the security of all that we hold most precious depends upon a few religious opinions, so familiar that they seem to many of us mere commonplaces, things

to be taken for granted. What a matter of course it seems for a man to be able to talk of *my* wife, *my* children, *my* land, *my* bankers' book, *my* mutton, *my* wine, *my* profession or business, *my* last will! Such privileges, however, really rest on our religious and political systems; and it is quite as well to be forewarned that there are systems of political philosophy which hold marriage with one woman to be exclusive selfishness, property to be theft, which deny the right to eat meat or drink wine, and to follow any special calling at will. In fact, the relation of the sexes is essentially connected with religion and politics, and varies as they vary. There is little of novelty in these extravagances. St. Paul describes them in three lines (1st Epistle to Timothy, chap. iv, verses 1—3), and every sexual and social heresy now rampant in America, including celibacy, teetotalism and vegetarianism, and spiritualism, flourished amongst heretics, and was denounced by the Church, in the first centuries. One great value of Mr. Hepworth Dixon's book to the Medical philosopher and psychologist is, that it shows in time present a vivid picture of times past. We are apt to read of ancient extravagances as if they were mere dreams long vanished. The heresies which distracted the early Christian Church and the atrocities of the Anabaptists in the 16th century, what, we may ask, are they to us? A sleepy eye may sometimes light upon the 38th out of the 39 Articles of the English Church, wherein it is stated, in pedantic phraseology, that "The Riches and Goods of Christians are not common, as touching the right, title, and possession of

the same, as certain Anabapists do falsely boast." And we may remember having read that there was a sect in the 16th century which proclaimed community of goods *and wives*, and which for a time was strong enough to propagate its opinions by fire and sword. Such madness, however, it is well to be reminded, spring from constant elements in human nature, and are sure to come to light at times of great political and religious excitement. Let us show from Mr. Hepworth Dixon their present rampant state amidst the unbridled license of opinion in the United States.

1. To begin systematically, let us begin with those who denounce marriage *in toto*. God, they say, is a Spirit; the flesh, with the whole material world, is subject to the devil. So also said the ancient Manichees, and herein lies the distinction between an ascetic and a Manichee. The ascetic believes in the sovereignty of God, and abstains from things—say marriage or wine—which he acknowledges to be good in themselves, *δι' ἄσκησιν*—i.e., for discipline, because he believes that he individually may be better without them. The Manichee (e.g., the teetotaler who raves about "cussed" alcohol) abstains because he believes them bad in themselves, and generated by, and subject to the devil. Let us see what Mr. Hepworth Dixon says of the sentiments of the American Shakers, a sect of devotees who abjure marriage, and live in communities, where they exercise themselves in horticulture and the preparation of vegetables. (It is to the Shakers that we owe podophyllin and other vegetable extracts of that sort). One of the female saints

thus explained their tenets to Mr. Dixon:—"By lust man fell from heaven; by abstinence from carnal thoughts he might hope to regain his celestial rank. No form of earthly love could be tolerated in the Redeemer's kingdom. Men called into grace must live as the angels live, amongst whom there is neither marrying nor giving in marriage. Every member of her church had been compelled to renounce his yearning after love; the wives consenting to dwell in a house apart from their husbands, the husbands in a house apart from their wives. They had put themselves this question—"If all men born into this world are born into sin, and made the heirs of death in the world to come, how can the saint, when raised from his fallen nature, dare to augment this kingdom of sin and death?" It must be added that the Shakers permit marriage to the outside world, but consider it a state unfit for saints, and that they have kept themselves free from the beastly practices ascribed to the Manichees of old.

2. *Free Lovers*.—It may seem a jump from one pole to the other, but we may as well take as the next item in our enumeration the persons who, having cast off all allegiance to the religion, philosophy, morality, and forms of thought of the past, openly advocate *free love*—*i.e.*, the union of the sexes at will—who deny that marriage is a high, holy, or pure state; and say that a partnership in matters sexual ought to be like any other—*i.e.*, subject to such terms and conditions as the parties may be pleased to adopt, or to none.

3. *Spiritualists*.—These are the personages who

derstand, a list of names and dates called history and geography ; in fact, they are qualified neither for business nor for teaching, nor yet for being companions and helpmates to a man who has his way to push in the world. We have reason to believe that there is abundant employment for women, if they were inclined and qualified to undertake it.

We affirm, then, that there is great need for raising women in position and education, and multiplying lucrative employment for them within the sphere of their own sex ; but we think they make a mistake in undertaking duties which are better fulfilled by men. It is an aberration of the sexual instinct in any girl to aim at occupations which are incompatible with the duties of maternity, and an equal aberration to smother those maidenly instincts which should lead her not to intrude into the occupations which custom has associated with the male sex. There is no intrinsic sin in riding astride a horse, or in wearing boots and breeches, but there is harm in violating those decent rules by which the conduct of either sex is regulated. We say it in all kindness, that for a girl to present herself at a public Medical examination is as great an aberration of sexual instinct, as it would be if a young man were to leave the dissecting room and apprentice himself to Madame Elise or Mademoiselle Couturière. For, after all, women cannot get rid of their sex. What is their real glory, their very life-purpose ? To be mothers. Theologians pretend that the Jewish women longed for children because each hoped to give birth to the Messiah ! This may be ; but all women long for chil-

dren. "There is no true woman but feels at her bosom the yearning for a baby's lips. There is no true woman but longs in her secret soul for a man's breast to lay her head on, a man's eyes to give her the one look which he gives to nobody else in the world!" So speaks an American author, Bayard Taylor, in a novel called "Hannah Thurston," which contains many a singular picture of modern American life and manners, and makes one feel that all America is not poisoned by communism and woman's rights. Read "Hannah Thurston," young ladies, and believe us that it is an aberration of the sexual instinct to choose occupations incompatible with maternity, and repulsive to the better class of men.

This article has extended to an extreme length, but we thought it better to finish the subject in one number. We hope we have shown how indissolubly the relations of the sexes are connected with religious and public polity; and we may add that any attempt to disturb either is fraught with danger to the whole social fabric. It is a significant fact that a very little license in religion and politics may bring men to a state in which they may not call anything, not even the wife of their bosom, *their own*.—(*London Medical Times and Gazette*.)

Remarks on Diseases of the Nervous System.

(*An Extract from the Annual Address to the Hunterian Society, on Medicine and Psychology*). By DENNIS DE BERDT HOVELL, Fellow of the Royal College of Surgeons, London.

We are but imperfectly acquainted with the subject of nerve-waste, or, rather, loss of nervous power, which is highly interesting, whether as regards the form where the generation of nerve-power is deficient or its waste abnormally rapid. Recovery from exhaustion is quick in some persons, and slow in others; the latter class comes most frequently under medical supervision. As the subject is somewhat intangible and difficult to trace, we are in some measure obliged to have recourse to indirect means of investigation. Our information is partly derived from the effects of remedies—*naturam morborum ostendit curatio*: an imperfect source, for the prescription of these is too frequently empirical; we do not clearly know how the so-called tonics act, and we are still more uncertain as to the effects of narcotics, whether they act by supplying the deficient element, or by themselves affording food for waste; and although the question remains unsolved, it is for a time happily set at rest by the production of sleep. Next arises the vexed question of tobacco, as a useful sedative or a mere indulgence. With regard to the action of tea, especially of green tea, if its effect be to lower the heart's action and reduce the fre-

quency of respiration, and so mechanically lessen the supply of blood to the brain, or if it be simply to stop waste, it is easy to see that it would be apt to act as an irritant, and keep awake those who are not the subject of that particular form of waste—for all active agents that do not repair go to oppress. This suggests inquiry into the lax condition which is ready to receive, and the irritable state which rejects medicaments, from the highest degree of toleration to utter repugnance to the smallest dose; and shows the importance of studying the opposite effects of ergotine and strychnine, of opium and belladonna on the nervous system, and of belladonna and digitalis on the heart.

Coffee is more effectual against the effects of cold than alcohol, because it not only stops waste, but according to Dr. Smith is a cardiac stimulant. Opinions as to not only the efficacy, but the actual effects of stimulants, are very different, and fiercely contested in proportion as their real action is imperfectly understood. If the opinion of Brodie be correct, that wines and alcohol do not give real power to the nervous system, but merely uphold strength while it is being expended, several of the phenomena of its use and abuse are explained. Without discussing the effects of its excessive use, it would appear that the impunity or otherwise with which it is indulged, depends to some extent upon the amount of exertion taken during its influence: to instance two extremes, the comparative impunity of post-prandial indulgence, and the contrast of the

evil effects of the morning glass of sherry substituted for breakfast, with the day's work in prospect. The subject of delirium tremens escapes for a time, till the shock of an accident or some other circumstance, proves to be an exciting cause; and according to the same hypothesis, the predisposition of the intemperate to heat apoplexy, is still more obvious, because such persons live, as it were, on the brink of nerve bankruptcy, and all borrowing incurs a larger debt to be repaid hereafter. Heat apoplexy is acknowledged to be a paralysis or paresis of the respiratory tract, giving rise to sanguineous congestion of lung from want of power to maintain circulation; cerebral congestion and extravasation ensue as a secondary result, the structure of the brain being free from appreciable lesion. Stimulants and tonic cold are the appropriate remedies. This does not contradict what has been previously said of other forms of apoplexy, but opens the question as to the best means of promoting contraction of vessels—this must necessarily vary with different states. Here the illustration of Dr. Billing is readily brought to mind, whether to take bricks out of the cart, or to flog the tired horse up the hill—a practice, which, if it does not issue in triumph, results in cruelty.

The effects of over-exertion, still more of dissipation, are more serious in the intemperate, because the structure generating nerve-force, being reduced to a state of greater exhaustion, is thus rendered more liable to molecular change. As a correlative statement it may be remarked here, that whatever

materially interferes with the generating power of nerve-vesicle, or the conducting power of nerve tubular fibre, constitutes paralyzing lesion ; and this definition includes all forms, whether of organic change, functional derangement, or that condition in which abnormal expenditure is largely in excess of supply, viz., the state of paresis.

A certain expenditure of nerve-power predisposes to paralysis ; a greater degree, especially when combined with depression from moral or emotional causes, tends to insanity ; excessive use or expenditure of a natural function causes the first, the perverted use or abuse of the function leads to the latter. Some confusion of idea and consequent misapprehension appears to have arisen from losing sight of a simple verbal definition : we speak of a patient being depressed, and again of his having rallied, the idea thus conveyed to the mind is that of simple elasticity ; but to examine the matter more closely, that which is spoken of as an impression or depression, is an actual loss of power or interruption of supply. The shock of an accident is an illustration of this ; and it becomes an interesting question how far this is a mechanical effect, in the same way that the magnetism of a mass of iron is deranged by a severe blow. It should be borne in mind that in such cases we are not dealing with steel springs, but with a body in which waste and repair are continually going on : we are speaking, in fact, of the relative proportion between these two processes ; and the state of depression, or more properly paresis, resem-

bles all matters of currency in depending upon the degree of solvency of the bank, and the amount of assistance which may be given to it from without.

This brings us to another subject. The moral emotions are allowed to have a more powerful effect on our frame than any amount of intellectual exertion and excitement; the link between the two, produces more speedy exhaustion than physical or mental labor. Although the heart is the reputed seat of the affections, their real centre would be more correctly described as that portion of the nervous system which regulates the action of the heart; and as we cannot properly treat the physical conditions of blood-vessels and other structures, without taking into account the nerve-power which regulates them, neither, in a higher sense, can we treat lesions of the nervous system without recognizing the moral power which sustains or depresses it, and thus it not infrequently happens that, in order to relieve the disorders of the body, we must first minister to the mind diseased and pluck from the memory the rooted sorrow.

It is present to the mind of all, that the blood-vessels are placed under the control of two classes of nerves; one derived from the sympathetic, producing contraction of calibre; the other, connected with the cerebro-spinal, presiding over dilatation.

The glands are similarly supplied with two classes of nerves—

1. The sympathetic, producing contraction of the secreting vessels.

2. The cerebro-spinal ramifying in the immediate vicinity, influencing dilatation.

The experiments of M. Claude Bernard have shown that the following phenomena occur after division of the sympathetic:

1. Dilatation of vessels, with increased rapidity of circulation.

2. Impeded interchange between blood-vessels, arterial blood retaining much of its venous character;

3. Increase of temperature, and

4. Of absorption.

5. Increase of muscular irritability, of temperature of surface, of vascularity, and general sensibility of cerebro-spinal nerves, constituting *hyperæsthesia*.

6. Functions of secretions are deranged.

7. As long as animals are kept in good condition they do not suffer from division of sympathetic; all excito-motory functions, even those of reproduction, are performed, but if condition be reduced the health fails proportionately.

Dr. Stevenson, of Edinburgh, has compared the symptoms of rickets with the phenomena resulting from division of the sympathetic.

1. Increased vascular action, visible pulsation of carotid.

2. Increased temperature of body, and local sweating, especially during sleep.

3. Increased nervous susceptibility and desire to be cool, indicated by kicking off the bed-clothes.

In *Mollities Ossium* we find a similar class of symptom, only associated with the wasting of bone-structure.

ture, instead of, as in rickets, interfering with its development; and although subjects of this disease are mostly weakly persons, who had experienced more or less privations, almost all had been subject either to excessive expenditure of strength or to anxiety of mind.

Moreover, both classes of cases are subject to excess of phosphates in the urine, and phosphorus, we know, enters largely into the composition both of nerve and bone; and as not only the contraction and dilatation of vessels, but the secretions of the glands, and the absorption, the deposit and repair of tissues are regulated by nerve influence, the impairment of power of the nervous system by exhaustion from excessive use or effort is still further increased and promoted by the depression arising from mental emotion; and we cannot but recognize the fact that this cause leads to alteration of secretion, to impairment of structure and waste of tissue as certainly and directly as actual division by the knife; in fact, to a state of paresis more or less complete, either by simple leakage, or impairment of vaso-motory power in its most minute ramifications; also, that different constitutions and states of health are variously affected thereby—the phosphatic diathesis being perhaps, that which is most predisposed to it; the effect is similar in other temperaments, though it may not be equally capable of demonstration.

The excessive loss of phosphates is found to be coincident with acute mania, with paralysis from excessive waste, and that caused by lesion of the

spinal cord. Again, the decomposition of urea leads to the evolution of ammonia and deposits of the earthy phosphates; in another class of case the vice of system is associated with profuse acid perspirations. In all forms arising from these various causes, the main object of treatment is obviously the restoration to the system of the lost material, and the internal administration of phosphoric acid has been recommended as the readiest means of accomplishing this; but how far does this plan resemble the task of endeavoring to fill the vessel of the Danaides? how far is it treating the symptoms, instead of remedying the cause? If we revert to the physiology of digestion, we find that the gastric juice secreted by the gastric glands consists principally of hydrochloric and other acids, and pepsine; and it is worthy of remark that several cases of paralysis, taking most frequently the form of paraplegia, have come under my notice, the main exciting cause of which was anxiety of mind. In these, treatment by direct tonics, steel, quinine, and even strychnine failed to produce a good effect, but steady and gradual improvement followed the administration of nitro-hydrochloric acid, persevered in for some length of time. The same treatment is sometimes successful in non-uniting bone after fracture. This gives rise to the hypothesis that anxiety of mind and other sources of mental depression, cause paresis of the sympathetic in a greater or less degree: that this becomes associated with the spinal paresis in the production of paralysis in different forms; also that the same cause influences the glandular se-

cretions more or less, and especially that of the gastric juice—the very fountain, as it were, of all nutrition—either by deranging the original secretion and making it defective, or indirectly causing the hydrochloric acid to enter into some abnormal combination.

As an instance of this alteration of secretion let us take that of a mother subjected to the influence of strong emotion; she suckles her infant, which immediately falls into convulsions, and perhaps dies. Death here is almost as instantaneous as that of the lady on the Schilthorn; though it is not by electric shock, but by altered secretion of milk—the almost tangible result of emotion. Conjoin this with the fact that the effect of venous congestion on the brain is equivalent to that of anæmia. A member of this Society* has pointed out that mania is one of the results of disease of the right side of the heart, which causes impeded return from cerebral circulation—the so-called determination of blood to the head.

We are here led to a very important question, how far insanity is the effect of exhaustive cerebral paresis, or dependent upon alteration of molecular structure of brain, proof of which has hitherto defied pathological investigation; or whether, in some forms at least, it is not caused by the introduction into the cerebral circulation of some altered or perverted secretion, not necessarily affecting the general nutrition of the body, but having a special affinity for producing irritation of the brain, in the same way that the poison of gout affects certain joints.

* Dr. Daldy.

One more circumstance connected with the depressing effect of anxiety deserves to be mentioned—its tendency to cause derangement of digestive function, and consequent alteration of the nutritive qualities of chyme, leading to imperfect renewal of certain structures. Fatty degeneration of the heart has been observed to be associated with phosphatic diathesis, and to belong, if not actually to constitute, a class of case liable to angina; and if the hypothesis of the connection between these two conditions be correct, it appears to demonstrate the direct influence of moral emotion over the physical condition of matter—that even

The passions, prejudices, interests,
That sway the meanest being, the least touch
That moves the finest nerve,
And in one human brain
Causes the faintest thought, becomes a link
In the great chain of Nature.

Allusion has been before made to John Hunter's state of health for seven or eight years before his death, to his liability to spasm about the præcordia which was frequently re-produced by slight causes, by trifling bodily exertion, and more frequently and especially by mental irritation, to which, uncontrolled hastiness of his temper rendered him particularly obnoxious; so sensible was he of this that he was wont to say his life were in the hands of any rascal who choose to teaze and annoy him. Let none presume to judge Hunter for this infirmity of temper which perhaps was a physical imperfection over which he had not perfect control; but rather blame

the thoughtless, inconsiderate, selfish conduct of those who provoked it.

How different is the true appreciation of his high character. His powerful mind was unceasingly stimulated by an ardent desire to forward the acquisition of those branches of knowledge which appeared to him best fitted to promote the improvement of his profession; to this object he devoted every hour he could spare from his daily avocations, or snatch from the time allotted by others to sleep; and to advance this end he was always ready to sacrifice the claims of worldly prudence and self-interest.

He took up the Glass of Time, turned it in his glowing hands;
Every moment lightly shaken, ran itself in golden sands.
He took up the Harp of Life, struck upon its cords with might,
Smote the chord of Self, which, trembling, passed through duty out
of sight.

It is well known that some personal differences existed between him and his colleagues at St. George's Hospital, and that in the morning of the day in which he died, in anticipation of attending a proposed meeting of the Governors, he expressed his apprehension lest some dispute should occur, and if it did, it would certainly prove fatal. He arrived at the Hospital, attended the Board, and, in the course of his remarks, made some observation which one of his colleagues thought it necessary flatly to contradict. Hunter immediately ceased speaking, retired from the table, and struggling to suppress the tumult of his emotion, hurried into the adjoining room, where he immediately uttered a deep groan, and fell lifeless into the arms of Dr. Robertson.

We must go yet a little further, and follow him to the dead-house. The body was examined after death. The viscera of the belly and head were found to be loaded with blood, but otherwise in nearly a natural state. The carotid arteries, and their branches within the skull, were in parts thickened and ossified. The heart was found to be the chief seat of disease, the pericardium was unusually thickened, but did not contain much fluid; the heart, itself was small, appearing too little for the cavity in which it was contained—its diminished size being the result of wasting, and not of condensation of its fibres—the mitral valves were much ossified, &c. The diseased condition of the heart must necessarily have made it unequal to its work for some time previous. At the moment of death it appears to have been empty, forming a marked contrast with the venous congestion of the head and abdominal viscera. Referring once more to the control which the sympathetic exercises over the contraction of the blood-vessels, at the head of which we must place the heart, it is a fair presumption that as on the one hand, the effect of anxiety and the depressing passions is indirectly to cause dilatation by means of vaso-motory paresis, that of anger and indignation on the other, is directly to excite the vaso-motory contraction of vessels—in the instance before us, by tonic spasm, producing a confirmed systole, a tension interrupting and arresting the circulation of the blood, and so putting a stop to life. The flushing of the face, the knotting of the temporal and frontal veins, which mark the paroxysm of anger, tend to confirm

this hypothesis, because, in addition to the cardiac and arterial action being intensified, respiration is also temporarily suppressed, circulation thus becomes more or less completely arrested, even to the extent of producing rupture. It was said of Cæsar—

Ingratitude more strong than traitors' arms
Quite vanquished him; then burst his mighty heart.

Within a short space of time two fatal cases of apoplexy came under my notice; in both instances the patient had been the subject of long continued anxiety, which was not communicated to any living person, and thus became intensified. The first was preceded by chronic asthenic paralysis, with the attendant symptoms of phosphatic diathesis. In this instance the anxiety was coupled with feeling of personal regret at the failure of speculations which had caused pecuniary difficulty and embarrassment throughout life. The second instance exemplified the form of apoplexy with extravasation described by Abercrombie; and in the course of the illness it happened more than once that the cerebral congestion, which was the sure precursor of insensibility and further extension of paralysis, was attended by the above named flushing of the face and marked fullness of the frontal and temporal veins, while the patient with clenched fist denounced the villainy of the partner who had ruined him.

Thus vaso-motory paresis, the effect of the depressing passions of anxiety and regret, was the characteristic feature of the first: and cerebral congestion and extravasation, the result of vaso-motory arterial

and cardiac tension, caused by the exciting passion of anger, that of the second; and these two instances appear to illustrate, by a real pathological distinction and contrast, the metaphorical alternative which conducts inevitably to the same fatal issue.

Or ever the silver chord be loosed or the golden bowl be broken.

Thus anger excites, fear and grief depress, anxiety adds irritation to depression, and disappointment exhausts; it is the canker-worm that eats into the heart of vitality, and overthrows the structure by sapping its foundation.

There like a scattered column lies the man.

It does not alter the individual, it only changes his position; the character of Wolsey was the same before his fall as after, for

His promises were as he then was, mighty;
But his performance as he is now, nothing.

From our experience of the effects, it appears that anger, fear, grief and disappointment affect the system from their vaso-motory influence, but that anxiety becomes additionally pernicious by extending its effects to the glandular system as well, altering the secretions.

Irritability, the effect of brain fag, over-work, and worry, attacks the moral strength through depression and exhaustion of the cerebro-spinal system, as well as that of the sympathetic. It is a defect that mars the perfectness of the character, like the moth that frets the garment, in contradistinction to the fair wear and use of the faculties, which by their healthy action give to the brain and nervous system the stimulus of

repair, so that their strength is renewed like the eagle's. Many are subject to it: Sturt,* the enterprising traveller, in the hour of fatigue; the calm Washington; the Iron Duke; the artist whose weekly productions instructed as well as amused half the habitable globe. It is apt to increase as age advances and strength declines; so that it might be said as truly of ambition that it is

The last infirmity of noble minds.

Some of us are only too liable to it; so let us hear what Brodie says of it, in relation to one of the brightest ornaments of our profession.

* When the obstacles and difficulties of his expedition to discover the river Murray increased, when all his men became exhausted, and one lost his senses, he says: I became captious, and found fault when there was no occasion, and lost the equilibrium of my temper in contemplating the condition of my companions. For the complicated dangers, which frequently made him shudder, and wonder at the same time how they were escaped, entailed severe and continuous labor on his men, and the addition of great privations overcame their determined resistance and almost superhuman efforts. They lost their spirit, and their whole bodies swung with an awkward and labored motion; their arms appeared to be nerveless, their faces became haggard, their persons emaciated, their whole nature was exhausted, and they frequently fell asleep in the midst of their painful and almost ceaseless exertions. No murmur, however, escaped them, nor did one complaint intentionally reach me. I did frequently hear them, when they thought I had dropped asleep, complain of severe pains and great exhaustion, and say, I must tell the captain to-morrow. To-morrow came, and they pulled on, as if reluctant to yield to circumstances. Yet most of these men were convicts. The contrast here is complete. The combined effects of fatigue, privation, and anxiety, producing irritability and feelings toward his faithful men which the superior mind of the commander acknowledged to himself to be unworthy and unjust; and the same causes, devoid of anxiety, leading only to loss of spirit and hope on the part of the men, and notwithstanding their comparatively uncultivated faculties, developing only firmer adherence to discipline and more faithful attachment to their leader. One set of circumstances made these men criminals, and another converted them into heroes. Here is matter of consideration for the legislator and the psychologist both.

Baillie was not originally, as I apprehend, a man of great physical power. It seemed to me that he found exertion either of body or mind to be inconvenient and painful beyond a certain amount. He was nervous and irritable; and while others looked with some sort of admiration, if not with envy, at his large practice, he complained of it as a great hardship, and, I have no doubt, felt it at the time to be so. His professional brethren had little sympathy with these complaints, and smiled at them, yet they were well-founded *realities to him*; and I suspect that he would have been a happier man, and have lived longer, if he had met with a smaller amount of professional success. The irritability of temper, to which I have referred, led him at times to say hasty and somewhat ungracious things, for which he was always sorry, and apt to reproach himself afterwards.

Brodie himself appears to have had a sound rather than a robust constitution, and it is not improbable that the depression of spirits to which he alludes in his Essays was to some extent the result of asthenia; nevertheless, he has left behind him the substance of more philosophical remarks than Sir Astley Cooper, whose sanguine temperament made him, in his turn, the man of action rather than of reflection. But we must not overlook another portrait of Dr. Baillie:

His reputation was of the highest order, as it depended upon the opinion entertained of him by the members of his own profession, who always looked up to him as the fittest person to be consulted in cases of difficulty or danger. Their preference of him is to

be attributed partly to his knowledge and sagacity, especially in what related to the diagnosis of disease, and partly to his general character, which led him to be always liberal and considerate to others, at the same time that he never seemed to be anxious about his own reputation, or to take any trouble to obtain peculiar credit for himself. He had also another important qualification for the position of consulting physician. He not only had a very clear perception of the matter which was placed before him, distinguishing at once that which was essential from that which was merely incidental, but his habit of lecturing had given him a considerable command of language which enabled him to explain a complicated case in a way which was satisfactory to the patient and his friends. In these explanations he never gave his knowledge for more than it was worth, or pretended to know more than he knew in reality; and this simple and straightforward mode of proceeding was one reason why the public reposed in him a degree of confidence, which others of more ambitious pretensions were wholly unable to attain.

Brodie has enjoined the importance of cultivating the imagination as a part of education, and it is to be observed that this quality was one of the endowments of John Hunter's mind, which, combined with observation and reflection, contributed to give him the high stamp of genius. But when the magnetic needle of his faculties ceased to point in the direction of professional research, it was no longer kept straight by rectangular currents, but became deflected from the

ordinary and proper usage of society; his manners were rude and uncultivated, and the deficient control of his temper, superadded, tended much to detract from the high position which not only his endowment but a certain nobleness of nature marked out for him.

Baillie possessed a fully acknowledged capacity for the high professional position which he held; and not only a cultivated and well-balanced mind, and the comprehensiveness to grasp all the points of a case, but the more rare judicial quality of summing up, of reducing the whole matter into a clear concise opinion; in him a certain physical deficiency constituted the imperfection which dimmed the lustre of his character. It is a much more grateful task—

To further seek their merits to disclose,
Than drag their frailties from their dread abode.

Locomotor Ataxia.

(Translated, from the German of Althaus in the *Deutsches Klinik*, 1866, for the *Quarterly Journal of Psychological Medicine and Medical Jurisprudence*.)

We may adopt, with Duchenne, three stages of this disease. The first lasts from four to five years, and is characterized by troubles of the cranial nerves, by peculiar pains, and a decrease of the generative power. The second stage lasts ten years or more, and is signalized by the appearance of ataxia and decreasing sensibility. To these symptoms is to be added paralysis in the third stage, and death ensues by exhaustion or some intercurrent disease. The affection is from the beginning either chronic or subacute. The cranial nerves

are first attacked, *i.e.*, the optic, the *motores oculorum*, trochlearis, the abducentes, (amblyopia, diplopia, strabismus, ptosis). The ophthalmoscope ascertains the symptoms of congestion (expansion of the capillary vessels and violet coloring of the membrane) and afterwards (in amaurosis) an atrophy of the retina. As to its prognosis, it is to be remarked that strabismus or diplopia may disappear even without treatment, while ptosis or amblyopia will not. The pains of such patients are described as jerking, suddenly appearing and disappearing. They are generally located in the lower extremities and are paroxysmal. If the pain occurs in the bladder, a vesicular catarrh will soon supervene. These pains diminish in spring, but increase after fatiguing walks and especially after venereal and alcoholic excesses. An important, but not constant symptom, is spermatorrhœa, first with, and afterwards without erections; exceptionally, priapismus and satyriasis will occur. There is sometimes, in the second stage, besides strangury, incontinence of urine and inability to retain the feces, and symptoms of ataxia, appear on a sudden or by degrees. The still vigorous muscles react no longer normally upon the emotional impulse, the equilibrium is lost, complicated motions can no longer be effected. There are two co-ordinate kinds of muscular activity, *viz.*, the harmony between the antagonists, and the instinctive, or emotional muscular actions. In the latter the antagonists do not remain inactive, but every intended motion results from a twofold nervous action, so that one group of muscles produces a motion, while another

moderates it. In progressive ataxia, the capacity for controlling the muscular actions is lost first, although every single muscle may still be contracted, and though even certain associated motions may succeed. Separate muscular contractions, however, do not occur in a normal condition; most of the muscular actions require a great number of simultaneous muscular contractions to which we accustom ourselves from childhood, and every child suffers, as it were, by ataxia, without being aware of it. Now these associated muscular actions take place in adults, instinctively without any special emotional impulse, and if this capacity is gone, we have a case of ataxia before us. It begins mostly in the lower extremities, the gait of the patient becomes faltering (as with many inebriates) and this infirmity is constantly on the increase; if you cause the patient to stand on his feet joined closely together, he begins to sway to and fro, particularly when his eyes are closed. Still this swaying does not in every case indicate ataxia, since it also occurs in different diseases of the brain, with feeble, very anemic persons and infirm convalescents. These symptoms increase by walking, especially when the patient wishes to turn around, in which case the feet are tossed to and fro without purpose, and become useless. Irregular muscular contractions will also take place.

The patient is, while lying down, able to stretch and bend his feet, but he does so suddenly by fits and starts, and can no longer calculate the strength required. The differences from paralysis are obvious:

sometimes there is weakness of motion connected with a sensible use of it, sometimes there is sufficient, or even abundant strength, without any power of using it to some definite purpose. These symptoms are far less marked in the upper extremities, the muscles of which may be tested by causing the patient to touch his nose or to make the sign of a cross while he keeps his eyes shut. Sensibility appears disturbed, the feet seem benumbed and heavy, with or without loss of the cutaneous sensibility, this loss manifesting itself in the soles and passing over to the chest, stomach, and the ulnar side of the upper extremities. In ataxia the soles and legs are almost constantly benumbed; this not being so, renders a diagnosis of ataxia doubtful. The decrease of this abnormal feeling indicates improvement. Anæsthesia occurs frequently, but only at a late period and not constantly, but the sensibility of touch never becomes extinct (analgesia, anodynia). The sense of touch is frequently everywhere diminished, and the patient needs often several minutes before he perceives the impression of touch; the reflex movements are, therefore, defective or entirely wanting. The influence of temperature is seldom impaired, but the patient may become unconscious of it, for it is known that patients, supposing they were going to take a tepid bath, have been scalded. The ability of distinguishing weight, too, is diminished, for such as suffer by ataxia cannot, like healthy persons, discriminate between a weight of 29lbs. in one hand and 30 in the other. As this ability may, in the soles of the feet, be diminished, so that the gait

becomes faltering, the diminution or absence of this ability has likewise been considered the cause of the faltering gait of persons attacked by ataxia. All the symptoms, mentioned above, increase in the last stage of this disease, while the muscular power decreases; the muscles become atrophied, convulsions take place, amamosis, palsy of the bladder, or some intercurrent disease put an end to the sufferings of the patient. It is a singular fact that the disposition of mind of such patients is quite cheerful, notwithstanding all their sufferings.

Regarding the *causes* of this disease we observe, that the greater part of the patients were from thirty to fifty years old and that this disease affects more men than women. Hardship, cold and dampness are rightly considered to produce it. The suffering is almost constantly aggravated in autumn and winter: if there is an improvement in this period, it may properly be attributed to the treatment of the disease. It is not yet ascertained, whether venereal excesses are connected with the origin of this disease, they are at any rate not its principal cause, as was formerly thought to be the case. Over exertion and nervous diseases of the parents are certainly additional causes.

The *diagnosis*, doubtful in the first stage, becomes very easy in the second, even if all symptoms other than ataxia of the muscles are wanting; in the third stage ataxia does no longer exist by itself, as the degeneration of the spinal marrow extends already to the spinal arteries. Ataxia *might be mistaken* for: 1. *myelitis*, in which, however, palsies may occur, but not ataxia;

there is no sympathetic affection of the cranial nerves, but pains in the back, spasms and muscular atrophy occur. 2. *Diseases of the cerebellum*, in which a condition similar to ataxia may appear, although the inclination to running forward or backward is more frequently noticed. Important distinctive symptoms are the fixed pain in the occiput, vomiting, a more indolent affection of the cranial nerves, convulsions and the epileptoid symptoms, all of which are absent in ataxia. 3. *Softening of the brain*, in which, however, hemiplegia, loss of memory and mind take place. 4. *Chronic poisoning by alcohol, lead and mercury* as well as syphilitic affections of the brain, in which diseases we must use anamnestic medicines and apply a treatment *ex juvantibus et nocentibus*. 5. *Palsy of the muscular sense*, a symptom common to different affections; but here the patient is completely palsied, as soon as the eye (representing the muscular sense) does not act any longer; as soon as the patient shuts his eyes or is in the dark, he is palsied; the muscular power is retained, as in ataxia, but the patient can effect motion only in daylight and with open eyes.

Prognosis. *Romberg's* despairing warning against any therapeutics as merely aggravating the disease, has been repudiated by experience. Even in advanced cases the sufferings of the patients may still be considerably alleviated. Intercurrent diseases impair the prognosis. Two facts encourage the physician to therapeutic interference: first, that the symptoms affecting the cranial nerves (excepting the optic) disappear in time, so that there exists a functional stage of the disease,

before the physical changes in the spinal marrow occur, in which stage medicines may accomplish much; second, that Charcot and Vulpian found, in a case of ataxia, some nerve fibres in the spinal marrow which were evidently in a stage of regeneration.

Treatment. If the patient is feeble, declining, anemic, prescribe besides nutritious food, iron, quinine, cod-liver oil and milk, which latter Hippocrates has recommended for erotic tabes. If great exertions have preceded, rest is imperatively required. Counter-irritants applied to the back must be wholly avoided, but the constant electric fluid may be passed along the vertebral column. Iodine should not be employed, but iodide of potassium and iron may be used, although they may not cure the disease. Baths may be recommended, but ataxic persons should not travel a great distance for them, but rather drink mineral water and take sulphuretted baths at home. Faradization is of no use, galvanization avails against some symptoms without curing the disease. The most reliable of all curative agents is still the arg. nitricum given at the rate of $\frac{1}{10}$ – $\frac{1}{2}$ gr. two or three times a day, which may be administered in connection with phosphate of lime (10–20 gr. pro die). This medicine may in such a dose be given without danger, especially if you discontinue it for a fortnight after every four weeks and give a purgative instead. I pay close attention to the condition of the gums. We must, in general, take care not to treat this disease according to one rule, but sharply individualize, as in all other diseases.

On the Treatment of a Certain Class of Destructive Patients.

By EDGAR SHEPPARD, M.D., Medical Superintendent
of the Male Department of Colney Hatch Asylum.

(From the Journal of Mental Science.)

Incidents occasionally arise in the management of great asylums, which lead us to reflect how little the community at large are aware of the state to which a human being may be reduced by what we term insanity. We learn, too, how exacting, unreasonable, and uncharitable the outside world may become, in reference to the unavoidable condition of some who seek the shelter of those hospitals to which our speciality devotes itself. It is within the experience of every medical superintendent how prone are the friends of patients to assume that ill-treatment and neglect are the order of the day. If a bruise shows itself upon a feeble and helpless lunatic, some attendant caused it. If a scratch is seen upon the face of one who is violent and aggressive, it is the work of some asylum officer. Bruises and scratches, quarrellings and fightings, personal encounters, seditious *melées*, are unknown in the big world without. There the leopard lies down with the kid, and a little child leads them. Why does not this happy state of things obtain in lunatic asylums? It does not occur to the public mind that the patients we receive are brought to us *because* of their violence, *because* of their feebleness and consequent liability to injure themselves,

because of their epileptic fits or other affections, which render them particularly prone to the infliction upon others, or to the reception in their own persons of external bruises or internal injuries. To suppose that any sort of supervision, however vigilant, can protect patients of this kind from every chance of accidents, is to lay a most unreasonable exaction upon our superintendentship, and require a state of discipline which can never be attained. Considering the increased tendency of the maniacal to violence, of the paralyzed to feebleness and unsteadiness of gait, of the epileptic to unavoidable wounds, it would be a matter of surprise to any reflecting and observant person, if the results of such tendency could anywhere successfully and entirely be prevented. That they should be prevented in a large measure is certain; that they *are* prevented in a large measure is not less true. The elaborate machinery set at work in asylums is for this purpose. But machinery is not so perfect anywhere as to yield us no list of casualties, in spite of all our efforts to render it so. It may be instructive to illustrate the position by actual experience. Three years ago a patient was admitted into a large asylum, blind, paralyzed, feeble, and greatly impaired in health. He was the subject of various delusions, and imagined that persons were pursuing him and trying to murder him. At night, in his fears and anxiety to escape his pursuers, he would keep trying to climb up the sides of the padded room in which he was placed for self-protection. After some hours of ceaseless rubbing and clawing, he at last managed to get some

kind of purchase for one foot, by which he was enabled to raise himself a considerable height towards a shuttered window. He slipped, however, and fell, bruising his nose and face considerably. This was at two o'clock in the morning. The medical superintendent was passing at the time, and hearing the fall, coupled with a loud cry of "murder," he opened the door, and found the patient bleeding at the nose and crying for mercy. At ten A. M. the patient's face was much swollen, and his eyes were discolored. At eleven o'clock his wife saw him, it being one of the visiting days of the asylum. The patient told her that persons had been murdering him in the night; and the wife, horrified at his appearance, believed he had been brutally treated by his "keepers." It was with great difficulty that she was quieted, and led to credit in some manner the statement of the medical superintendent as to the cause of her husband's appearance. If this man had died within a few days, the wife would probably have demanded a coroner's inquest, and it would have been hard, looking at the personal disfiguration of the deceased, and knowing the tendency of commonplace minds suddenly charged with official dignity and responsibility, to assume *prima facie* violence, to convince a jury that death had not been caused, or at least hastened, by unfair usage.

Three days ago, in the same asylum, a patient was admitted paralyzed and impaired, but supposed by his friends to be in good health. The night of his admission he had an epileptiform seizure, threw himself about in the padded room, and blackened both

his eyes. If his friends should see him before he has resumed his natural appearance, they will probably believe that the man has been ill-used. If he should die suddenly (which is not improbable) before they see him, and before the bruises have disappeared, the matter will be still worse. No one saw the bruises inflicted, but to the eye of the medical superintendent there is evidence of a convulsion, during which they were unconsciously self-inflicted. If a coroner's jury is summoned, they will probably share the suspicion and indignation of the deceased's friends; and instead of "well and truly trying" the issue, they will prejudge it, constitute themselves the partisans of a supposed injured man, and in the absence of direct proof that death was caused by violence, append some qualifying and offensive remarks to their official finding of "Natural death."

These are typical and very instructive cases. At the hands, or rather in the minds and by the tongues of all they receive a conventional treatment. Sympathy is manifested where it is not called for, and injustice is rendered where it is not deserved. It is of great importance, therefore, to bring such instances under the notice of the public, that they may be led to see, if possible, the liability of innocent persons to have guilt imputed to them, or, at all events, to be spoken about most uncharitably.

Being more helpless and less responsible than any other members of society, it is indeed no more than right that lunatics should have every sort of protection. That they are now largely protected is beyond

a doubt, and that most cases of cruelty and neglect are brought to light, is beyond a question. Nay, so widely are they shielded by the unrestricted humanities of modern treatment, by the supervisorship of commissioners, of magistrates, of guardians of the poor, and by the censorship of the press, that they are the most privileged subjects in the British dominions. Moreover, there is superadded to all this a yet surer protection, based upon the acquired knowledge on the part of those who have charge of them, that the ratio both of good discipline and of cure is the measure of kindness and judicious handling exercised towards the insane.

And yet the startling incidents which sometimes occur, lead us to ask, if all these privileges and protections are not sometimes ensured at the expense of justice, to those sane persons who have cast upon them the responsibility of asylum administration. Is it not true that in every inquiry touching the general treatment of the insane, the case is at once invested with suspicion by those whose duty it is to make such inquiry? Is there not a liability to prejudge the motives and the acts which have brought about any particular investigation? Is there not an inaptitude in the public mind overfed by, and yet still craving for, the "sensational," to deliberate calmly upon doubtful circumstances, and reflect dispassionately upon matters which have the faintest semblance of wrong?

It may be doubtful whether the public are so much to blame as the press, which often creates a morbid taste, ministers to it, and supplies it with

baneful exaggerations. In the eager anxiety to anticipate his contemporaries—to be the first at promulgating a bit of “startling intelligence”—a journalist grasps at an *ex parte* statement, rattles off upon it a leading article, in which he overcolors all the facts, which, if in fairness he would only wait, will be toned down, and have given to them a different complexion, by the *audi alteram partem* of to-morrow. What is justice to him? He has an expectant crowd waiting for his news and his lucubrations, and he cannot afford to postpone a sensational narrative and a slashing commentary upon it, which will increase the immediate sale of his paper, merely upon such very common pleas as those of truth and honesty.

In the large asylum from whose records the above mentioned cases have been drawn, a circumstance has recently occurred which illustrates the taste and the tendency we are now discussing.

In the spring of 1866, some person (supposed to be an attendant discharged for dishonesty and ill-treatment of patients), wrote a letter to the Commissioners in Lunacy, complaining of the cruel treatment of the male patients in Colney Hatch Asylum—particularizing two by name. It was stated that one, named Harrison, had been put into a room without any bedding or clothing for ten successive nights; and that another named Hobbs, had been so immured for 140 nights during the winter of 1864-65. Upon receiving this communication, the Commissioners requested the medical superintendent of the male department to attend a meeting of their Board, which he

did, and where he pointed out the inaccuracies and exaggerations of the charge, but admitted that for several nights these two patients had been in their rooms without bedding or clothing, in consequence of a persistent destructiveness, which there was no possibility of controlling but by the substitution of restraint—a measure of which he did not approve. The maximum of Hobbs' confinement in a nude state was four nights instead of 140, his residence in the asylum having only been sixty-seven days. Nor did the maximum of Harrison's similar confinement exceed four nights, at long intervals.

Yet in spite of this clear and explicit statement, to be read in the Asylum Report, all the newspapers have put forth the untruthful declaration of the complainant (whose animus is unmistakable) as the real narrative of facts, and have grounded their remarks thereupon. Even one of the medical journals, in a spirit of recklessness which it is difficult to characterize in proper terms, has similarly misrepresented all the circumstances of the case, and written: "The statement made by Dr. Pownall, and admitted to be true by Dr. Sheppard, Medical Superintendent of the Colney Hatch Asylum, was to the effect that a patient named Harrison was put into a room upon bare boards, within brick walls, without either clothes or bedding; that Hobbs, another patient, was similarly immured for 140 nights during the winter."

How difficult it is, you see, even for those who lay claim to the scientific conduct of a medical journal, to resist this tendency to overstatement, where such over-

statement runs into the "sensational." To me it seems that unless a periodical is accurate in its reports, and careful about going to the fountain-head for its information, before it commits itself to the censorship, it sinks itself to the level of those cheap newspapers whose chief duty seems to lie in pandering to the public taste for Lady Audley's and other such-like "secrets." To assume a certain position taken by another to be false—to hurl invectives at its indefensibility—to say that motives are beside the question, and to show by remarks that facts are beside the question likewise—these things are not calculated to elevate the science which we try to elucidate, or to make manifest that love for impartiality which should be held sacred by every writer.

Let me now enter upon the use of the first personal pronoun, and make a few observations in my capacity of medical superintendent of a large asylum, upon the general management of a certain class of destructive patients. If I advance anything new or startling, I do so in the interests of humanity, and with a view of ameliorating the condition of those in whom I am interested, and among whom I spend my time and my energies. For what I have to say I invite the careful consideration of other superintendents, and the judicial weighing of educated men, having in view the same object as myself.

Some drift of the position which I desire to take, may be gathered from an extract of a letter published in our Annual Report, addressed by me to the visiting justices on the subject of the two cases above referred to.

I have already explained to you (the visiting justices of the asylum), by word of mouth, that the patients in whom the destructive propensity usually manifests itself are, for the most part, of the class termed general paralytics; that their physical sensations and perceptions are impaired or annihilated; that they besmear themselves with their own filth; that their skins are of an unnaturally high temperature; that their delusions are of the grand and extravagant kind; that they will stand or sit the whole of the night naked, with their bedding and clothes heaped in one corner of the room, singing, laughing, gesticulating, and giving every evidence of their own happiness. The only thing which robs them of their pleasurable sensations is restraint. This is why I do not practice it. I have gloved a patient at night to prevent destructiveness, but the result has never been satisfactory. The wrists have been galled by the ceaseless efforts of the patient to free himself, and if he has not destroyed his rugs he has not used them. The lunatics of an earlier day were chained and manacled—not so much for their violence as their destructiveness. They had straw to lie upon; and I believe that the playing with the straw was to them a source of infinite amusement—better for them to spend their uncontrollable energies upon, than strong rugs and ticken frocks.

The question, then, really is—How are these cases of destructiveness to be managed? The worst subjects of this propensity will destroy padded rooms; shirts and blankets and strong rugs they rip to shreds, and have only their full measure of satisfaction when they

have reduced themselves to a state of nudity. To gag the mouth, to fasten down the arms, to glove the hands, is at once to distress the patient, and substitute a restraint which is intensely irritating for a freedom which though seeming to result in a state of things which shocks philanthropy, involves no sort of unhappiness or suffering. This is a conviction which has been forced upon my mind by visiting patients of the kind described, at all hours of the night, and conversing with them upon those imaginary pleasures with which their minds are occupied, and by which they are happily blinded to a sense of their own physical degradation. And this is why I have occasionally sanctioned the withdrawal from a patient of his bedding and clothing at one of those periods when his destructiveness has reached its highest point. I have been unwilling to see the county property destroyed night after night, for no sort of purpose.

In the interview which I had with the Commissioners in Lunacy on the eighteenth of June, I invited them to give me some suggestions as to the manner of treating such cases as those now under consideration. They say that for patients to be in rooms without bedding or clothing is unheard of in this philanthropic age, and that such circumstances admit of no sort of justification. But it must be known to any commissioner who has been a superintendent of an asylum of any magnitude, that numberless patients are uncovered the whole of the night—that they will stand up naked or lie upon the bare floor, having heaped their bedding and clothing into one corner of

the room, or amused themselves by tearing it to pieces. They condition for themselves, unconsciously, the very surroundings of only seeming discomfort, which have been very rarely and unexceptionably ordered in cases of extreme destructiveness. The two states are absolutely identical.

It should be observed that there are two classes of destructive patients. In one there is a state of dermal anæsthesia—diminished, almost annihilated, sensibility—with little or no elevation of temperature. The sense of taste here is also not infrequently destroyed or perverted, as evidenced by patients besmearing themselves with and eating their own excrement. In another class there is heightened sensibility—dermal hyperæsthesia—with great elevation of temperature. In these cases the skin continuously exposed in a room of ordinary or even low temperature retains its elevation.

Experience leads me to the belief that there is a mode of treatment—of a passive but not on that account of an unadaptive kind—specially suited for these perplexing cases. Alluding to this mode, a writer in the *Medical Times and Gazette* of this week says it was “probably humane, certainly not cruel or unjust. It would have been vastly more cruel to have increased the sufferings of the poor patients by covering them forcibly with clothing which their instincts rejected, and by the adoption of the only possible means of retaining it upon them, namely, bodily restraint. How often does each of ourselves, sane though we be, when restless and hot at night, throw

off every article of clothing, except a night shirt, before we attain the sensation of comfort essential to sleep! How many of us have not been guilty even of walking about our rooms naked as we came into the world, in order to attain the same object? Is a lunatic not to be permitted a similar gratification of a harmless, perhaps beneficial instinct?"

This question exactly expresses the truth and common sense of this question. Wherever there is a hot hyperæsthetic skin, clothing of any kind is a distressing burden, and self-created nudity is the result, as being alone supportable. We have evidence of this even in recent cases of acute mania.

Eighteen months ago, I admitted into this asylum a young man, well educated and in prosperous circumstances, suffering from a severe attack of acute maniacal excitement. He was brought here in a strait-jacket, having been very violent and threatening. He had a warm bath immediately, with a cold douche to the head, and then took one drachm and a half of Battley's sedative in a pint of beef-tea. He was placed in a padded room, with a shirt on, a mattress on the floor, and ordinary clothing. He continued very noisy, and could be heard jumping about the room, and shouting to the Almighty to deliver him from the flames of hell, (a not uncommon supplication where there is a hot hyperæsthetic skin.) Upon opening the door, after the lapse of one hour, it was found that he had torn his shirt to shreds, and heaped his bedding into one corner. His skin was intensely hot and burning, and he was in a state of great excitement. The

bedding and clothing were now withdrawn, and a strong ticken shirt, fastening by lock at the back of the neck, was placed upon the patient. In another half hour he had nearly strangled himself in his efforts to draw the shirt over his head. This was now removed likewise, and he was left in a state of nudity. To him the world was not large enough for freedom, and the slightest hindrance to his movements by the contact of clothing was restraint. Three hours later this man was asleep, the first time for more than a week, his friends said, and he did not wake up for five hours. For several days he was in the padded room, but he refused to have any clothing. With his improvement, which began on the fourth day, the temperature and hyperæsthesia of skin diminished, and he had ordinary bedding and clothing. He made a rapid recovery, and left the asylum, expressing his gratitude for the kindness he had received from every one. I remember his speaking to me during his convalescence of his being naked, of the great relief it was to him, and of the terrible insupportableness of his clothes. I have seen cases of this kind over and over again. They are full of interest to those who will suffer themselves to be taught.

Now, if this patient had been seen sleeping in a state of nudity by his friends, or by any clamorous outside humanitarian, this passive treatment would not only have been called in question, but severely censured. We could not have convinced them that this nudity was the very condition which first ensured the sufferer's sleep.

If the perfection of treatment, however, is manifested by its adaptiveness, and by the relief which it affords to the patient, as evinced by its immediate results, and by his subsequent confession, surely he is a bold man who will question its theoretical and practical soundness. Yet is not this the principle acted upon by those who write with fine pens, in slippers and dressing gown, that for a lunatic to be naked is barbarous, and that the permission—the official countenance—of such a thing is “inconsistent with the modern and more enlightened system of treating mental disease.”

But we have worse cases than the occasional destructiveness of acute mania to deal with. In some forms of general paralysis there is great and persistent destructiveness, with extravagant delusions, unwillingness to wear any sort of clothing, or to lie under any sort of covering. The expiring energies of life seem to be concentrated upon ripping and tearing everything that comes within reach. Some subjects of this sad disease will at certain times manage to destroy padded rooms, and it is then very difficult to know how to dispose of them. Medical treatment—digitalis, opium, the wet sheet—will not touch their malady. The hyperæsthesia and preternatural heat of skin are indications as plain as indications can be that the soft and unirritating wrappings of the atmosphere are the most soothing and adaptive clothing; and the very destructiveness of the patient is confirmatory of this view. He is in the condition of one who enters the hot chamber of a Turkish bath, minus the relief afforded by perspiration, and, like him, is intolerant

of clothing. There is another typical member of a great race of the human family to whom likewise he might be compared—"the naked negro panting at the line." To him also would clothing be insupportable misery. And surely if the processes of disease are such as to acutely heighten sensibility and temperature, and develop a condition analogous to that of one at the equator, or in a chamber heated artificially to 130 degrees or 140 degrees, it is obvious that these three states should be met by arrangements in some sense similar, and in every sense comforting. Can the existence of insanity affect the principle which equally underlies the three states alluded to?

In some cases of general paralysis this dermal hyperæsthesia and elevation of temperature are not continuous, but liable to fluctuation; the destructive mania then commonly fluctuates with it. This is very remarkable and confirmatory of the views advanced. The destructiveness is often commensurate with the need of nakedness. It is known also in other cases sensibility is deadened, and the temperature of the skin is rather depressed than elevated: here warm shirts fastening behind are indicated, to protect the patient, as far as may be possible, from undue exposure. But it seems to me that where this destructive propensity reaches such a pitch as to render it foolish to put a man in a padded room, or to give him any covering there is only one course open to us which can be called humane, because it is not connected with restraint. A few single dormitories ranged side by side, and lined with kamptulicon, linoleum, India-rubber, or some

other durable yet yielding substance, would constitute soft and pleasant surroundings for a naked patient. These chambers might be heated, when necessary, by a common apparatus, to a temperature varying with the season of the year and the individual requirements of the patients as indicated by the thermometer applied to the skin. Such rooms, well ventilated, and of ample cubic space, would be admirably adapted to dirty and destructive general paralytics, never, in certain stages and types of the disease, in one position, never sleeping, standing up more than ten hours out of twelve. They would be at once the greatest security and the greatest comfort to the patient.

It is not pretended (to recur to the cases which have elicited these remarks) that I had such chambers as these for the patients Hobbs and Harrison. Unfortunately, I had not. And so, under the pressure of short supplies, caused by the coincidence in point of time of much destructiveness on the part of other patients, they were placed in rooms which had no lining to the walls and flooring. With this only I reproach myself. Not that I believe one moment's suffering was caused to any one by it. I know, indeed, that the happiness of both patients was of the most assured though extravagant kind, and that on no morning after a night of exposure to the atmosphere was there any diminution in the temperature of their skins.

But what I did has given rise to comments which for obvious reasons I regret. It has created an unnecessary panic; it has given a handle to reckless scribblers of which they have made the most. It has given

pain also to all who are interested in the position of this asylum, and specially to the visiting committee, who have throughout this unfortunate business completely exonerated me from the charge of cruelty, and treated me with a kindness and sympathy of which I can never be unmindful.

And yet why do I say "unfortunate?" It will be otherwise, in my judgment, if this clamor should initiate in any asylums such a provision as that which I have above expounded. If the truth be spoken, there are, I suppose, in every country, asylum patients of the class we are discussing. I have at this moment, in different stages of their fatal malady, nearly one hundred cases of general paralysis. Besides these there are a number of chronic maniacs of destructive habits. So that at times the supplies will hardly keep pace with the exigencies of disease, as commonly viewed and regarded.

I repeat, however, that to me these exigencies are not of that material character known as strong rugs and ticken dresses. I have a preference for something which is more humane because unirritating; more congenial to the feelings of the patients because it never can involve restraint. The most fitting dress is a warm or temperate atmosphere, unseen but yet appreciated, yielding, but ever in close contact, which winds itself about the surfaces with a soothing tenderness, and permeates every pore with its influences. It is easy to shut up a destructive lunatic at night, and satisfy the requirements of the public by giving him ordinary bedding and clothing. But what advan-

tageth it him if he is left unnoticed till the morning, when he destroyed everything in the first hour of the night? Or how much the better is he, if visited and re-supplied merely for the same process to be renewed? What purpose is served by such a course? What can justify such unmeaning extravagance? Might not the money so squandered be applied to the provision of a suitable atmospheric clothing which will not tear; and of soft surroundings which cannot be destroyed?

This is what I desire to bring under the notice of my fellow-laborers, the medical superintendents of other asylums. The Commissioners in Lunacy, asked by me in full conclave to give some suggestions as to their views of treatment under these perplexing difficulties, advise me to consult my professional brethren, and are content to put upon record their disapproval of my views. In this, the literary organ of our association, therefore, I invite the dispassionate consideration of a subject about which I have been candid and outspoken, and of a treatment which recommends itself to me as above all things humane.

It must be sad indeed, (and the reflection must occur to every mind), to see those who are stamped with the Divine image, and are supposed to be destined for something higher and better in the untried future, reduced so low in the animal scale as to be insensible to all that men commonly regard as decent and proper. But we must be careful that we do not on that account let our sympathy blind us to their actual requirements. The standard of our healthy wants and wishes is not

the standard of desires which are irreparably morbid, and of appetites which are hopelessly depraved.

There is a prevalent opinion that the administrative anxieties and responsibilities of medical superintendents of asylums render them specially obnoxious to general paralysis. By a righteous Nemesis (the generous journalists who decry us will say) we are ourselves visited by the very malady which sinks humanity lower than any other, and the worst stages of which we have failed to make less cruel and ungentle to the sufferer. Be it so. We must take our chance both for the disease itself which is to end our mortality, and to the hands which are to conduct us to the confines of the everlasting shore."

On Nightmarc of Children.

By SYDNEY RINGER, M. D., Professor of Materia Medica and Therapeutics at University College; Physician to University College Hospital, Assistant to the Hospital for Sick Children, Great Ormond street.

(From the London Medical Times and Gazette.)

SCREAMING OF CHILDREN.

Violentscreaming, which cannot be quieted, and which may last for a few minutes to several hours, is frequently witnessed in children. This is generally produced by one of three causes—hunger, pain, or nightmare. These remarks treat of screaming from the last cause.

The following account gives a fair example of a case of this kind:

Charles L., 2 years old, came under my care at the outpatient department of the Children's Hospital. The child was badly nourished, and was afflicted with a frequent hacking cough, that troubled him much more at night than day. For two months he had, twice or three times each night, started from his sleep, screaming violently. Each paroxysm of screaming lasted about half an hour. Sometimes he rolled about the bed, threw his arms wildly about, and knocked his head violently against the bed; on other occasions he sat up in the bed and screamed so violently that he became black in the face. While thus afflicted his eyes rolled, and he appeared to be quite unconscious, as he did not recognize his mother, and could not be brought to by her care and attention. His mother stated he did not appear to have his senses. He gave no signs of being in pain. He did not talk, he only screamed violently. After each paroxysm he fell asleep, but his sleep was disturbed, and his eyes still rolled, and he frequently moaned. His gums were neither red nor swollen. His appetite was good, but his bowels had been relaxed for three weeks, and his motions were green and slimy, but no worms were ever seen in them. He was fed judiciously. He wetted the bed at night. During the fortnight that preceded his application for relief at the Hospital, he had suffered from two convulsive fits, when his arms worked and his face twitched. Each of these fits lasted twenty minutes.

This case may be accepted as a very fair example of the screaming of which we are now speaking.

Such screaming may occur in children of all ages; but, while it is met with in children of 10 or 12 years of age, it is of more common occurrence in those of a few months to 2 or 3 years old.

These attacks may last a very variable time, for though the paroxysm may pass away in a few minutes, it sometimes continues for half an hour to one or even two hours. During this time the screaming is violent and continuous. Sometimes the children appear to be asleep throughout the paroxysm, while other children wake from their sleep, but continue to scream with unabated violence; but even when awake they often appear to be unconscious of what occurs around them. They seem to be, as their mothers state, "out of their senses;" thus they for the most part cannot be quieted, Others appear to awake thoroughly, and are then terribly frightened, and often tremble all over. Such children can generally be quieted in a short time by kindness and attention paid to them, but they remain for some time much agitated, and refuse to be left alone, or, if removed from their bed, they are afraid to return to it. Some children cry only a little, but they wake up frightened and trembling.

Such screaming may continue to occur for months and even years, sometimes disappearing for a time, and then, from various causes to be immediately mentioned, it returns again. It is often repeated several times each night for several months.

Such attacks are naturally a source of much annoy-

ance and much anxiety to the parents, and thus medical men are not unfrequently consulted for this affection. The screaming may be so violent that the child becomes "black and blue" in the face, and occasionally it even terminates in a general convulsion. This, however, is unusual, and in my experience occurs only in children who suffer from convulsions without screaming and from other causes. Such paroxysms of screaming sometimes recur only with long intervals. The child may have one attack but this may not be repeated for some weeks, or even some months. On the other hand, they may recur ten or twelve times a night.

This screaming differs from delirium, as it does not occur in those diseases accompanied by delirium. Moreover, there is no incoherent talking or muttering, while some children can be roused from this state and are then perfectly rational, although greatly frightened; it occurs only during sleep. The mothers often call it nightmare.

The children, the subjects of this affection, are very generally pale, often ill-nourished, and out of health. The immediate cause of this screaming appears to be some disturbance of the stomach and intestines. The nature of this affection of the intestinal canal may be very various in different cases, for one child may suffer from constipation while another is troubled with diarrhoea. This disturbance is very generally dependent on food ill-suited to young children; for this irregularity of the bowels, and the screaming which accompanies it, are especially frequent in those children who have been brought up by hand, and who, consequently,

suffer on the one hand from diarrhoea, on the other from constipation. Children thus reared suffer, as is well known, very generally from constipation, and pass hard pale, lumpy motions, something like marbles. These masses may consist of fæces; they are often composed of coagulated undigested milk, of a yellowish or greenish-yellow color outside, but are white and cheesy within, looking like, and, indeed, being composed of curds of milk. (It may be here mentioned, in passing that not uncommonly children pass by the bowels, or sometimes vomit, large masses of the same composition. These are generally two or four inches long, and about an inch in diameter. They often excite much wonder and anxiety on the part of the mother. When broken, the white curdy appearance at once declares their nature.) Children who suffer from the affection now under consideration are sometimes infested by thread worms, and also show signs of the altered condition of the mucous membrane of the stomach and intestines, by itching, heat, and dryness of the inner part of the nose, with itching at the anus. This screaming is increased by anything that interferes with the general health of the child. Thus, it is observed to be worse when the teeth are making their way through the gums, although the irritation and pain which arise from teething appear to be incapable of themselves of exciting this screaming. It is also made worse by slight attacks of catarrh of the lungs, or eruptions on the body. By treatment this screaming can usually be at once arrested. Both general and local treatment are in most cases required, the former to improve the general

health, the latter to remove the conditions immediately exciting the screaming.

The diet should be attended to, and any irregularity in the hours at which food is given to the child, or any unsuitability in the nature of the food, must be remedied. Attention to these points will very generally arrest any diarrhoea which may be present, but constipation with hard shotty motions will generally prove more obstinate, for such motions are almost invariably passed by young children under six months old when brought up by hand, and this although they may be correctly fed and take nothing but good cow's milk sufficiently diluted with water. We have seen that these hard, round, lumpy motions are partly composed of coagulated undigested milk. This coagulation in mass can sometimes be stayed by the addition to the milk of alkalies, such as limewater or bicarbonate of soda. The latter is preferable for this purpose, as limewater confines the bowels, and thus bicarbonate of soda should be preferred.

If the bowels are confined, an active purgative will, in the great majority of cases, suffice to stay the screaming, and will insure to the child calm and refreshing sleep. A powder of rhubarb and soda repeated every night, or every other night till three powders have been given, is useful. If the child be pale, and the constipation recurs and is obstinate, the following prescription will be found very advantageous—namely: Steel wine, to which is added a few drops of tincture of rhubarb, in quantities adapted to the age of the child and to the obstinacy of the constipation.

Usually six drops of tincture of rhubarb in a teaspoonful of steel wine given three times a day will open freely and comfortably the bowels of a child from six to nine months old.

In order to effect a permanent cure it is often necessary to give medicines to improve the general health of the child, as these children are frequently pale and badly nourished.

Thus, in children suffering from the affection we have just described, to effect a permanent cure, if the general health be bad, treatment must be directed to the restoration of the body to sound health. In these cases iron, cod-liver oil, with cold sponging prove most useful. Of the various preparations of iron, the tincture of the sesquichloride, in my experience, is decidedly the best.

It has appeared to me that bromide of potassium is able to stay this screaming, but as its administration has been accompanied by the use of purgatives, or a regulated diet, it is difficult to determine how far the bromide was useful. It is, however, I feel sure, worthy of a trial in obstinate cases. Cold baths must be given with care; for while they may, if properly administered, do much good, if administered without certain precautions they will do great harm to children. If too great a shock be given to the child, depression of the system will be produced, and this may last even several days after the bath is administered, when the child may be languid and depressed, and may suffer from much chilliness with loss of appetite. Thus the amount of shock produced by the bath must be regulated to

the age and strength of the child. In cold sponging of the body the shock caused is proportioned to the coldness of the water and the length of time the bath is continued; while the younger the child, or the weaker its health, the less able is it to bear up against the effect of the shock to which it is exposed. Hence with young children, and especially with those whose system is depressed, the bath should be continued only for a short time, and if the weather be cold, the water must be slightly warmed. When the child is weak, the bath should be continued at first for a few seconds only, and its duration be gradually increased as the child becomes accustomed to its use.

If the following simple plan be adopted, the child, even if very weak, can take the cold bath with advantage, and all chance of depression is removed. The child should be placed before a good fire with its feet in warm water, while the cold water is freely poured over every part of the body except the head and face. The healthy reaction, with the agreeable sensations which follow the use of the bath, may be much increased by placing the child for a short time in the warm bed from which it had just previously been removed. The bath should be given immediately the child leaves its bed, and the breakfast should be taken soon after the sponging is completed.

REVIEWS AND BOOK NOTICES.

Les Pénalités Anciennes.—Supplices, Prisons, et Grace en France ; d'après des textes inédits. Par CHARLES DESMAZE, Conseiller à la Cour Impériale de Paris. Paris, 1866.

Ancient Penal Laws.—Punishments, Prisons and Pardons in France ; from Unpublished Documents. By CHARLES DESMAZE, etc.

There is scarcely any better standard to be found of the morals and civilization of nations than that afforded by a consideration of their penal laws. For, in accordance with the principles upon which they are based, and the manner in which they are administered, we are justified in forming an opinion for or against the claims to refinement and education which a people may present. Barbarous nations, as a rule, have cruel and vindictive laws, which are enforced with unnecessary rigor, but without sureness, solemnity or decorum. The objects sought to be obtained are thus often lost, for it is undoubtedly true that the two great ends for which all punishments should be awarded—the safety of society and the reformation of the individual—are best accomplished by mildness in the penal law and certainty in its execution. For centuries the most civilized nations in the world went on with the faggot, the wheel, the rack and other horrors; and not till the arguments of Beccaria opened the eyes of their legislators to the impolicy and wickedness of their bloody statutes were the grand principles adopted of making the punishment proportionate to the offence, and of abolishing everything like vindictiveness in the penal code.

A more interesting volume than that of M. Desmaze it has rarely been our lot to peruse. A treatise which takes up any subject, considers it intelligently, and follows it through all the various phases which the ever changing social and political conditions of man impress upon it, must of necessity be valuable and interesting. One which treats of punishments is peculiarly so, for there is a feeling in men's minds which impel them to seek for knowledge in regard to a subject like this which so nearly concerns the safety of their lives and property, or affects their liberty of speech or of action. As a philosophical study of human nature, customs and manners, it would be difficult to find a more fruitful volume than that before us. We purpose, therefore, to select some of its more salient features and to present them in outline to our readers:

According to the Salic law every offence was atoned for by a pecuniary forfeit. There was a regular tariff according to which reparation was made. For robbery, the sum to be paid varied according to the value of the article stolen; for other offences according to the gravity of the act committed. This law, introduced into France by the Germans, also provided for proofs of innocence or guilt, by combat, by the hot iron, or by the sacrament.

Under Charlemagne and his successors the administration of justice was prompt and severe, and sometimes the sentence of the law was executed by the judge as soon as he had finished the trial. Thus we read: (*Decret Childerbert*, cap. 8) "Judex ad casam latronis ambulet et ipsum ligare faciat, ita ut si Francus fuerit, ad nostram presentiam dirigatur, et si debilior persona, in loco pendatur."

In matters of State the accused was obliged to walk on nine ploughshares red hot. If he got burned he was guilty, if he escaped he was innocent.

A perjurer was obliged to lose his hand or to redeem it with money.

Pregnant women were not allowed to be tortured.

A proof of guilt or innocence of murder was afforded by the *jus feretri vel cruentationis*. All the suspected persons were required to pass before the body of the person killed. If, at the approach of any one of them, blood flowed from the wounds, the guilt of that one was established. If no blood flowed all were innocent.

Besides the proofs by cold and hot water and the hot iron, there was the proof of the cross. The accused was placed before a cross with his arms extended; if he made the least movement while in this position he was considered culpable.

Excommunication was, in the middle ages, a potent arm in the hands of the clergy. More generally exercised to protect the people against their tyrannical rulers than otherwise, it was occasionally employed very irrationally. Thus, in 1120, the Bishop of Laon excommunicated the caterpillars which infested the fields, using the form employed the previous year by the Council of Reims against married priests. As late as 1516, the Bishop of Noyes admonished the caterpillars to retire in six days under pain of anathema and excommunication.

Under Philip Augustus, punishments were generally awarded in an increasing ratio. Thus it was decreed that a thief should, for the first offence, lose an ear, for the second a foot, and that for the third he should be hanged.

If a pecuniary compensation was allowed for a murder, such was not the case for counterfeiting in the 13th century. The makers of false money were boiled alive as the following bills show:

"Twenty-seven livres and four sous to Master Henry for boiling four makers of false money."

"One hundred sous for the purchase of a cauldron for the boiling of makers of false money at Montdidier."

In the 14th century the makers of false money were punished by the loss of a hand, by their eyes being put out, and by death.

In Brittany counterfeiters were boiled and then hung.

Judges were responsible for their errors.

"In 1309 Pierre Peurant, Provost of Issoudun, having caused Jean Borgoio-Milan to be hung, on suspicion of robbery, notwithstanding his appeal, and the inquest having demonstrated the innocence of the supposed criminal, the Court orders that the body of the defunct shall be given up to his representatives, and that the Provost shall pay to them one hundred livres de Tours and a like sum to the king."

Jews condemned to death were hung between two dogs.

Decapitation was a privilege reserved to nobles and magistrates.

From a very early day prostitution was under restrictions in France. In 1259 prostitutes had special districts in Paris assigned to them, beyond which they were not allowed to ply their vocation. In 1416 a decree of the Provost of Paris provided that any woman of dissolute life, who should keep a brothel outside of certain defined districts, "should be branded with a hot iron, put into the pillory, and sent out of the city."

They were also prohibited wearing gold or silver buttons or embroidery on their robes.

In 1427 it was a common usage in France to require a husband who had allowed his wife to beat him, to ride on an ass through the city. If the victim of uxorial prowess could not be found another was obliged to take his place. Thus:

"In January, 1427, one Arnault being accused of receiving a blow from his wife, it was ordered that the neighbor of Arnault should ride the ass in lieu of the culprit, who had fled."

In 1352 an ordinance of the King prohibited all persons, others than physicians of the faculty of Paris, from practising medicine within the city or suburbs of Paris.

During the 14th and 15th centuries torture was generally employed to extract confession. Water was poured down the throat till the pain caused by the distension became unbearable, and the wretch confessed, either truly or falsely.

The annexed cut, taken from M. Desmaze's book, shows the manner in which this torture was inflicted :



An official record reads as follows :

" Stripped, and placed on the little trestle and bound."

" At the first kettle full, said ' I know nothing. ' "

" At the second, ' Ah, I know nothing, I am innocent. ' "

" At the third, ' I suffer! My God! ' "

" At the fourth, ' Enough, enough! Jesus! Mary! ' "

" Placed on the large trestle."

" At the fifth, said nothing."

"At the sixth, idem."

"At the seventh, 'I can confess nothing!'"

"At the eighth, 'Ah, I am dead!'"

"Was then placed in bed."

Torture was also applied by means of cords drawn so tightly around the body that they penetrated into the flesh.

The following account shows how the executioner's services were valued :

"For decapitation, 20 sous."

"For hanging, 10 sous."

"For cart, 5 sous."

"Lance on which the head of the criminal is to be exposed, 5 sous."

Public executions of women were rare in the 15th century, and if pregnant they could not be submitted to torture till forty days after their confinement.

Animals were subject to punishment for offences against the law.

A sow and pigs, in 1457, having killed a child, the Court decreed as follows :

"We declare and pronounce that the sow belonging to Jean Bailly by reason of the murder by her committed upon the person of Jean Martin, shall be confiscated to the justice of Madam de Savigny, in order to be subjected to capital punishment, by being hung by the hind legs to a tree. In regard to the pigs of the said sow, nothing appearing against them than that they may have eaten the said Jean Martin, they having been found bloody, the trial of the said pigs is postponed and they are remitted to the said Jean Bailly, he giving bail for their appearance in case it should be ascertained that they really did eat the said Jean Martin."

In 1612, a hog was condemned at Molinchart to be knocked down with a bludgeon and then burnt to ashes for having eaten an infant.

In the 15th century a suicide was thus punished :

"We declare the deceased, X., to be guilty of homicide, he having killed himself by thrusting a sword into his heart.

"For reparation we condemn his memory to infamy forever, and we order that the body of the said deceased shall be attached by the executioner to the tail of a cart, the head behind and the face to the earth, and thus drawn through the streets of this city to the Place de St. Firmin, where it shall be hung by the feet to a gibbet, and that when it shall have hung there twenty-four hours it shall be thrown into the public road."

"We also declare all his effects to be confiscated."

In the early part of the 16th century punishments for crimes were awarded as follows :

Blasphemy—For the first four offences, pecuniary amends; for the fifth, amend and iron collar from eight o'clock in the morning till one o'clock; for the sixth, pillory, the uvula cut off and then the tongue.

High Treason—Quartering.

Peculation—Confiscation, degradation, death.

Counterfeiting—Death.

Robbery—Breaking alive on the wheel.

Duelling—Death.

Assassination—Death. Same punishment for the attempt.

Concealment of Pregnancy and Child-Birth—Death.

Abduction—Death.

Forgery and Perjury—Death.

Defamatory Libel—Whipping for the first offence; death for the second.

Adultery—The woman had her head shaved and was confined in a convent.

The man, if a servant, who had committed the offence with his mistress, a noble woman, was sent to the galleys and sometimes put to death. She was condemned to like punishment.

Illicit Exportation of Grain from the Kingdom—Death.

Parricide—Amende honorable, the hand cut off, breaking alive on the wheel.

Domestic Robbery—Galleys for life if the articles stolen were not locked up; death if they were.

Murder—Death.

Bestiality and Sodomy—Death.

Incest—Death.

Infidelity and Heresy—Burning alive.

Arson—Death.

Bigamy—Amende honorable and galleys.

Simple Theft—Whipping, branding and banishment.

Horse or Cattle Stealing—Galleys, whipping or branding.

Fratricide—Hand cut off and breaking alive on the wheel.

Stealing of Sacred Articles—Burning alive.

Murder of a Husband by the Wife—Hand cut off, burning alive, ashes scattered to the winds, and all her accomplices punished by being broken on the wheel.

Murder of a Wife by the Husband—Breaking alive on the wheel.

Rape (undoubted)—Death.

Such is the sickening record given by M. Desmaze, and many examples are cited by the author of the various offences and the punishments inflicted. The *amende honorable* which was a part of the penalty awarded to certain crimes, was made by the offender being placed under charge of the executioner, his shirt taken off, a rope put around his neck and a lighted torch put into his hand. He was then led into court or to the place where his offence was committed, and on his knees obliged to ask pardon of God, the king, and his country.

Torture was more systematically inflicted in the 16th and 17th centuries than at any previous period. Indeed, it was deemed indispensable as a means of eliciting the truth, notwithstanding the numerous instances of failure which were constantly occurring. It remained an integral part of the administration of justice in France till 1789, when it was abolished by the Constituent Assembly. The writings of Beccaria and Voltaire did much to prepare the public mind for its entire abrogation. Besides water, extension, and the rack, the other means in use were the strappado (hoisting the supposed criminal by ropes tied to his wrists and then suddenly letting him fall till his feet almost touched the ground) and the *tour*, a kind of extension similar to that obtained by the rack. Splinters of wood dipped in melted sulphur were sometimes placed between the fingers and toes and then lighted. A great deal of power was left with the local authorities relative to the kind and extent of the torture to be imposed, and this was so often abused that ordinances were several times enacted defining the species to be used.

Thus a woman named Famet, condemned at Reims to the gallows for having assisted a band of murderers in killing seven persons, three of them children—was, on the 11th of February, 1786—only three years before the abolition of torture—put to the question in order to force her to reveal the names of her accomplices, among whom was her son. After being repeatedly tormented and interrogated, this woman in the course of her examination varied twenty-three times in her answers, but never once in the slightest degree inculpated her son.

Two years later, Marie Tison, being accused of having cut her husband's throat, was put to the question. She was undressed and examined by the physicians and surgeons of the court, who found her pulse perfectly quiet and regular. Her thumbs were then put into the apparatus and extension was applied. She cried: "My God, how I suffer! My God, what can I confess when I know nothing? I do not know who killed my husband with the razor; he may have done it himself."

Further extension having been used, she exclaimed, "For God's sake kill me! I have no knowledge of the death of my husband. The Lord will judge them that judge me. I know nothing. I will not condemn myself when I have nothing to confess."

The executioner having advised the judges that her shoulders were dislocated, the extension was removed, but she was kept suspended by the thumbs.

The physicians having caused her to inhale the vapor of vinegar, she remained quiet for an hour; then renewing her exclamations of denial, she added, "I killed him as much as you did."

Having remained more than an hour in silence, still suspended by the thumbs, she said, "You may do with me as you like, I did not kill my husband."

Having been again racked she lost consciousness and was then taken down.

We have cited these instances from M. Desmaze's book as striking examples of the folly, the stupidity and the wickedness of the penal law in France less than a hundred years ago, and of the inefficacy of physical torture to break the will of a determined person. Such means of obtaining confession can only avail with the weak minded, and in them without regard to their guilt or innocence. It would be an insult to the age we live in, to argue a word against such cruelties were it not undoubtedly the case, that in some form or other, bodily suffering is still employed by civilized man as a means of extorting the truth.

Torture, though in general use throughout the Continent of Europe, never had a legal foothold in Great Britain. That it was illegally practised in many instances there is no doubt, and Lord Bacon even went so far as to urge its employment. The principle of English law incorporated into the constitution of the United States, that no man can be compelled to bear witness against himself, has not always been regarded by those clothed in authority.

To no one more than to Beccaria is humanity indebted for the legal abolition of torture. The more enlightened ancient writers declaimed against it, but their arguments were lost sight of till he, in his *Essay on Crimes and Punishments*, so thoroughly exposed the absurdity of the practice. As he says.

"The result of torture then is a matter of calculation and depends on the constitution, which differs in every individual, and is in proportion to his strength and sensibility; so that to discover truth by this method is a problem which may be better solved by a mathematician than a judge, and may be thus stated: *The force of the muscles and the sensibility of the nerves of an innocent person being given, it is required to find the degree of pain necessary to make him confess himself guilty of a given crime.*"

Here, for the present, we must take leave of M. Desmaze's interesting treatise, intending at some future period to review the other divisions of the subject which he has investigated with so much success.

Idiocy and its Treatment by the Physiological Method. By EDWARD SEGUIN, M. D. New York, William Wood & Co., 1866, p. 457.

A Manual for the Classification, Training and Education of the Feeble-minded, Imbecile and Idiotic. By P. MARTIN DUNCAN, M. B., &c., and WILLIAM MILLARD. London, Longmans, Green & Co., 1866, p. 191.

The Author of the work first named above, has long been known as one of the most indefatigable and skillful of those who have devoted themselves to the development of the intellect of the feeble-minded. His excellent book entitled *Traitement Moral, Hygiène et Education des Idiots*, etc., published at Paris in 1846, was a great step in advance of anything that had previously appeared on the subject, and stamped its author with a high character as a physician and a philosopher; and the present volume, though embodying many of the features of the first, is yet sufficiently distinct from it to show that Dr. Seguin has not failed, during the last twenty years, to study and reflect upon the principles he then enunciated. Nor was the work published in 1846 the first which Dr. Seguin wrote upon the subject. As early as 1839 he was engaged with Esquirol in a series of observations relative to the amelioration of the idiotic condition, and published the results of his labors in the same year. In 1841 and 1843 two other works on the hygiene and education of idiots were given by him to the world. So far as we are aware, no one is able to speak with more authority upon the subject of Dr. Seguin's studies than he himself.

The present volume is divided into two parts; the first treating of idiocy, and the second of its treatment by the author's method; besides which there is an introduction in which a history is given of the progress of schools for idiots, and of the methods of instruction pursued, and an appendix of many remarkable cases and of interesting commentaries upon them.

Dr. Seguin defines idiocy to be a "specific infirmity of the cranio-spinal axis, produced by deficiency of nutriment in utero and in neo-nati." It is, therefore, in his opinion, that condition which is caused by the want of development in the brain and spinal cord, whether this want takes place before or immediately after birth. Why he should include the spinal cord in the terms of his definition, and limit this latter to the new born, is not apparent. Certainly if the brain went on to full development and the spinal cord did not, the child would not be idiotic, and just as surely would the individual be feeble-minded, if from any cause, the brain was arrested in

development at any time before the age of maturity was reached. It is, however, extremely difficult to define, in general terms, a word of so ample an application as idiocy, and, perhaps, upon the whole, Dr. Seguin's definition is as complete as any of the many others which have been made.

The circumstances capable of producing idiocy in the offspring, to which the mother may have been subject during her pregnancy, and those which may have been attached to the father during the act of sexual intercourse, must of necessity be varied and extremely difficult of investigation. Dr. Seguin enumerates some of these, and though we can scarcely believe that all are factors in causing the arrest of cerebral development in the fetus, it is very certain that several of them do effect this result. Speaking of the mother, he says: "She may have been under-fed in puberty herself, or through previous generations; or so miserably enervated by music, perfumes, savors, pictures, books, theatres, associations, that a precocious loveliness has outgrown her motherly capabilities, as *forcing* converts the pistils and stamens of flowers into beautiful fruitless petals.

"She being pregnant has used for exclusive food unnutritious substances, such as pickles, dainties, lemons, tea, brandy, etc., or vomited all real food soon after ingestion.

"She has conceived at a time when spermatozoa have encountered noxious fluids of venereal or menstrual origin, or have been altered in their vitality previous to their emission, by drunkenness, etc. She is often passive under the causes of impressions, depressions, shocks, privations, exertions, abuses, excesses, altering the nutrition of the unborn or new-born child."

That over-indulgence on the part of the mother in music, perfumes, savors, books, pictures or theatres will give rise to idiocy in the offspring must be more or less a matter of speculation; that the use of food deficient in nutriment will do so, scarcely admits of a doubt; and that "sudden and protracted impressions, of an accidental or moral nature," act with this power, is very certain. It would be strange, judging by analogy, if these latter did not exert an influence prejudicial to the well-being of the unborn offspring. We know that a strong mental impression will sometimes arrest the flow of milk or cause a diarrhoea, or congestion of the lungs, or an apoplexy, or some other derangement of the organism. It is not, therefore, when we come to reflect upon the intimate connection which exists between the fetus and the mother, a surprising fact that the former should occasionally suffer either in mind or in body through violent impressions made upon the maternal mind.

The influence of alcoholic intoxication is well marked in producing imbecility or mental disease of some kind in the offspring. Morel¹ gives

¹ *Traité des Dégénérescences, physiques intellectuelles et morales de l'Espèce Humaine, etc.* Paris, 1857, p. 78.

many examples illustrative of the fact. According to this author, the sequence is as follows:

1st generation: immorality, depravity, excess in the use of alcoholic liquors, moral debasement.

2d generation: hereditary drunkenness, paroxysms of mania, general paralysis.

3d generation: sobriety, hypochondria, melancholy, systematic ideas of being persecuted, homicidal tendency.

4th generation: intelligence slightly developed, first accession of mania at sixteen years of age, stupidity, subsequent idiocy, and probably extinction of the family.

Dr. Whitehead,¹ quoting Dr. Adams, says that women who are habitual drunkards generally produce immature or idiotic children.

With reference to the effect of intoxication at the time of sexual intercourse, some authors have alleged that epilepsy was liable to be induced in the resulting offspring. How far this supposition is based upon facts we are unable to say with positiveness. It is probable, however, that the opinion is not unfounded. A short time since, a lady who had heard nothing of any such theory, informed the author of this review, that a child she brought to him to be treated for epilepsy, was begotten by a father intoxicated at the time of the coition which she believed resulted in her conception with this unfortunate boy. All her other children—seven in number—were healthy and well formed. If, as Dr. Seguin says, "women would only speak," we should be able to arrive at certainty in regard to many of the causes of idiocy where now there is only speculation.

The effects sometimes produced in infants by milk which has undergone a morbid change through impressions made upon the mind of the nurse are well known to physicians. A case came under the notice of the writer several years since in which convulsions were produced by the ingestion of milk which had been altered by mental influence, and another in which a child two years old, after sucking the breast of its mother immediately after the latter had been greatly frightened, was thrown into a comatose condition, and reduced to a state of almost complete idiocy.

Dr. Seguin relates two similar cases:

"Mrs. B. came out from a ball room, gave the breast to her baby three months old; he was taken with spasms two hours after, and since is a confirmed idiot."

"In a moment of great anxiety, Mrs. C. jumped into a carriage with her suckling, a girl of fifteen months, so far very intelligent and attractive. The child took the breast only once in a journey of twenty miles, but before

¹ On the Transmission from Parents to Offspring of some Forms of Disease, and of Morbid Taints and Tendencies. London, 1867, p. 81.

arriving at destination she vomited several times, with no other interruption than that of coma, and after an acute fever, the little girl settled down into the condition of a cripple and an idiot."

These and all other similar instances, are, of course, open to the objection of uncertainty as to the cause, but the coincidences have been so numerous and striking as to leave scarcely a doubt upon the subject.

Dr. Seguin's account of the mental and physical phenomena of idiocy is full, explicit and interesting.

We regret that we cannot transfer some of his descriptions to our pages. We have only room for the following extract relative to the moral nature of idiots. If Dr. Seguin is not entirely correct in ascribing so high a degree of perfectibility to these unfortunate beings, he at least gives evidence of his own goodness and kindness of heart.

"That the idiot is endowed with a moral nature, no one who has had the happiness of ministering to him will deny. Epileptic, paralytic, choreic or imbecile children will often strike or bite their mother or affectionate attendant. If any idiot is found doing the same, (and we never found any) he must have been taught it by some cruel treatment imposed upon him. In general, as soon as his mind is opened to reflection, the tender family feelings are so deep in him that they often interfere with his successful transplantation into the broader and richer ground of our public institutions. It is true that his habits are sad, droll or repulsive; that his doings are often worse than none; but these manifestations exhibit as much the carelessness and want of intelligence of the parents or keepers as they do the primary character of the infirmity. Does not the idiot in making his silly gestures tacitly say, 'See what I am doing, if you knew how to teach me better and more, I would do it.' It is true that previous to being educated the slightest work is too much for him, and makes him recoil; but if we succeed in making him believe that he has accomplished a real object, emulation will appear and shed a ray of satisfaction over his face. He is sensible to eulogy, reproach, command, even to imaginary punishment; he sympathizes with the pains, he can understand, he loves those who love him, he tries to please those who please him; his sense of duty and propriety is limited but perfect in its kind; his egotism is moderate, his possessive and retentive propensities sufficient; his courage, if not Samsonian, is not aggressive, and may easily be cultivated. As a collective body, idiotic children are in their institutions equal in order and decency, in true lovingness if not in loveliness, to any collection of children in the land."

In the second part of his work, Dr. Seguin treats fully of the education of idiots according to the method which he very properly designates the physiological. "This method," he writes, "object of the present exposition, consists in the adaptation of the principles of physiology through physiological means and instruments to the development of the dynamic perception,

reflection, and spontaneous functions of youth." It would be impossible for us within our limits to do full justice to the good sense with which Dr. Seguin has treated this important division of his subject. We can only say in general terms that it consists in developing to their utmost extent without overtasking, the germs of such faculties as are possessed and by attention to all the hygienic and physiological requirements of life, enabling the patient day by day to obtain such a condition of physical well-being as will render him capable of continued improvement. Dr. Seguin's system is one of gradual progress. There is nothing strained or forced or sudden about it. Little by little, but with great sureness, the pupil marches onward, mentally and bodily, till at length a point is reached at which he is almost a new being and fit to become a useful member of society. Of course this point is not the same in all. Idiots, like persons of sound mind, differ in their capacity for acquiring knowledge, but they are never so low as to be incapable of learning.

In the third part Dr. Seguin discusses the moral treatment of idiocy. Firmness, conjoined with the most unvaried kindness, form the basis of the course of instruction to be pursued. "To make the child feel that he is loved and to make him eager to love in his turn, is the end of our teaching as it has been the beginning."

The fourth part is devoted to the consideration of the institution or school for idiots in all its more important relations of situation, hygiene, architecture, furniture, etc. The first institution of the kind was opened in Switzerland under the charge of Guggenbuhl, in 1839, and soon afterwards, if not simultaneously, one was established in Prussia by Saegert. The first school of the kind in the United States was opened in July, 1846, at Barre, Massachusetts, by Dr. H. B. Wilbur. There are now eight of these institutions in the country, at which nearly a thousand children are in constant training. Among all its charitable foundations there is no school for idiots in the city of New York or under its control. Surely this should not much longer be a reproach to us.

In concluding what we have to say of Dr. Seguin's work, we most cordially recommend it, not only to the members of the medical profession, but to all persons, whether they be charitable or otherwise, who take an interest in learning something about human nature in its low as well as its elevated forms. No educated man or woman can read this book without feeling that he or she is being made acquainted with new and interesting facts, nor we believe without having their sympathy awakened for the unfortunate class of beings which Dr. Seguin evidently loves so well.

The little volume of Dr. Duncan and Mr. Millard is likewise a very excellent and methodical treatise. Indeed, so far as the description of the idiotic condition, the systematic division of subjects, and the practical application of principles are concerned, we doubt if it has its superior in the English or any

other language. The authors are evidently men of experience and describe with graphic truthfulness what they have witnessed. Though, perhaps, not so enthusiastic and sanguine as Dr. Seguin, they have confidence in the ability to alleviate nearly all cases of idiocy and in a few rare instances to render the afflicted individual able to earn a livelihood and to take care of himself. As they state, however, there remains a disposition to lean upon the judgment of others and a want of proper self-reliance which can never be eradicated. Boys have been taught useful trades and girls have been instructed in the use of the needle and housework so as to be able to earn a maintenance.

Cases belonging to the higher grades of society have acquired the power of amusing themselves, of making a fair appearance in life, without obtruding their eccentricities upon the world, and of pursuing some congenial occupation without the necessity for constant guidance. In all, the moral and religious feelings have been aroused and developed, and those who were once selfish, sensual and depraved, have been rendered kind and considerate in their conduct. In conclusion, the authors say :

"To complete the climax it may be considered what the cases would have become, if they had been left to themselves, uncared for and untrained, with growing habits of self-will, self-indulgence, dullness, idleness, mischief, untidiness and vice."

Looking at the whole subject of the education of idiots, we doubt if any one thing is more strikingly illustrative of the charity of the nineteenth century than the efforts which have been, and are now being, made to increase the knowledge and happiness of the unfortunate class of beings whose intellectual and moral faculties are undeveloped, and those who have aided in this good work can assuredly contemplate with warrantable feelings of pleasure the results of their scientific, arduous, and disinterested labors.

Discours de M. PARCHAPPE, Inspecteur General de premiere classe du Service des Aliénés de l'Empire. Dans la discussion sur les différents modes d'assistance des Aliénés.
Paris, 1865.

Among the last public acts of M. Parchappe, was the delivery of the address before us, in the course of the debate which took place in the Société Medico-Psychologique relative to the management of the Insane Asylums of France. As the lamented author has entered with great fullness into the exposition of the actual condition of these Asylums and has been equally explicit and comprehensive in the statement of his views, we propose to lay some of his statements and arguments before our readers. M. Parchappe, in the early part of his discourse, refers in the following terms to his advantages for obtaining full information relative to the subjects of his inquiry:

"The fulfillment of the duties which the position I have the honor to hold imposes upon me, has placed me in the best possible position for forming opinions upon very exact data.

"The exercise of these functions has given me great experience. I have had ample time for observation, and I have been invested with ample authority for inspecting all branches of the service.

"I think, therefore, that I shall be able to bring under the observation of my colleagues a more exact and detailed account of our asylums than many of those which have been given to the public.

"And I have the hope that the guarantees of sincerity and impartiality furnished by my long public career of so many years will give some authority to my opinions and my assertions."

Certainly no alienist in France, and very few throughout the whole civilized world had a better right to use such language than M. Parchappe. In alluding to the prejudices which the more ignorant portion of the public entertain against insane asylums, M. Parchappe discusses with great ability all the questions involved, and shows that it is an abuse of the principle of "liberty" to contend for the freedom of an insane person to do what he likes. Why give an individual who has lost his reason more license than one who is sane? The latter is not allowed to do as he pleases with what is his own, still less to interfere with his neighbors' lives or property, and yet we have actually heard persons contend for the absolute non-restraint of the insane, and for their management by "moral suasion" alone!

The author, in the course of his remarks on this subject, says: "But in what does the privation of liberty in our asylums consist? Certainly the insane are not allowed to go out freely and to act as their delirium may suggest. But those who are able—and there are many—walk out under careful watching, and those who work in the fields go to their labors properly attended, either by groups or singly, as the case may be, and they leave their rooms to work in the shops or to perform the various duties of the establishment which have been assigned to them.

"During the hours for recreation they repair to the gardens—and they go out again when the time comes for them to assist in the religious exercises at the chapel.

"Those who are unable to leave the building—and there are not many of this class—have assigned to them places for exercise which are rendered inviting by plants and flowers.

"It is only in very rare cases that an insane person is so violent as to necessitate his separate confinement.

"The strait jacket is only used in cases of absolute necessity—although in France we prefer this means of restraint to isolation, as allowing exercise in the open air.

"The insane are allowed to practice among themselves those social ob-

servances and usages to which they have been accustomed, and which they are capable of recognizing.

"For occupations they have agriculture and horticulture, various services about the establishment—sewing, washing, carpentering, locksmithing, making mats, ropes, etc.

"For amusements they have games of all kinds, books, and vocal and instrumental music.

"Such are the conditions of the life of the insane in our asylums. Conditions which approach as nearly as possible to those of ordinary social life, and even to the life of the individual in his own home. The liberty is restrained to a certain extent, but there is as much as the insane person actually needs, and can safely be trusted with."

The chapter on the "*Mortality of the Insane*" is very interesting and instructive. The causes which are directly associated with the mental condition are: general paralysis and senile dementia which are always incurable; acute mania which sometimes rapidly tends towards death by exhaustion, and insanity associated with epilepsy. The other forms of mental alienation, though lessening the average duration of life, do not of themselves directly lead to a fatal termination.

According to M. Parchappe, the hygienic conditions of the insane in the asylums of France are as good as they should be. No small amount of actual observation has convinced us that he is not correct in this opinion. There never was a hospital, whether intended for those afflicted in body or mind, in which all the hygienic conditions were equal to the requirements of the laws of health. Those of France form no exception to this assertion. The writer has examined a great many of them, and though he bears willing testimony to the admirable manner in which the great majority are constructed, and the skill and humanity with which they are administered, he has seen many things about them which were certainly not in accordance with the more enlightened views of sanitarians.

The proportion of cures has heretofore been somewhat less than in some other countries. According to tables given by M. Parchappe, it was in 1853, in France, 1 to 3.2; in 1858, in England, 1 to 2.6; in 1861, in Scotland, 1 to 2.4, and as the mean of three years, in Belgium, 1 to 3.1.

The Gheel system of placing the insane in village families meets with M. Parchappe's unqualified condemnation. He regards it as unsuitable, either for the dangerous or the curable, and shows that the number of cures among the insane, at Gheel, has been scarcely more than half that of the other Belgian asylums. We presume that the great majority of scientific alienists are thoroughly convinced of the inapplicability of the Gheel system.

In conclusion, M. Parchappe expresses the opinion that in France, as well as in other parts of the civilized world, insane asylums have since

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the beginning of the present century been constantly improving. In this opinion we entirely coincide. And with the present light which we have on the subject, we do not see what greater degree of perfection can be attained than that which has been reached by our best asylums.

CHRONICLE.

THE JOHNSTON WILL CASE.—The following are the main points of the very admirable charge given to the Jury by Judge Merrimon, before whom the Johnston will case was recently tried at Edenton, North Carolina. Mr. Johnston died ten years previously, leaving a large property which he devised, with the exception of a few small legacies, to three gentlemen in no way related to him, and two of whom were his overseers.

It was contended by the relatives that Mr. Johnston was of unsound mind, that he entertained delusions in regard to his relations, and that the will was the offspring of these delusions.

It was shown in evidence that the testator had made several attempts at self-destruction, that he was subject to paroxysms of ungovernable excitement, during which he had been known to whip himself violently, and threaten the lives of others, and that he had imbibed the delusions that his relatives had deserted him, and were not competent to manage his property. The Jury very ignorantly, and without regard to either the facts or the law, sustained the will.

The case has been carried to the Supreme Court of North Carolina.

The medical profession throughout the civilized world will, we think, agree with us in commending the enlightened and scientific views enunciated by Judge Merrimon, and we are very sure that our brethren of the law will find nothing in them contrary to good sense, equity and sound legal science.

Among the counsel for the contestants were Ex-Governors Graham, Bragg, and Vance, and Colonel Moore—an array of legal ability rarely seen in any court.

CHARGE.

1st. Under our laws the late James C. Johnston had the right to dispose of his property, both real and personal, as he would, by deed or will, if he was subject to no mental disability.

2nd. It is admitted that the script propounded as the last will and testament of the late James C. Johnston was sufficiently executed on the 10th day of April, A.D., 1863, and on the 12th of September, A.D., 1863, by him to make sane his will, if he had that degree and character of mental capacity required by the law to make a will; and the Court charges the Jury that the script was sufficiently executed in matter of form, if they believe the evidence touching the execution of the same.

3rd. Then the issue submitted is, did the alleged testator have sufficient mental capacity, in degree and character, to make his will on the 10th of April, A.D., 1868, and on the 12th of September, 1863?

4th. It is objected to the script propounded that the alleged testator did not have such mental capacity. The caveators so insist, and the burden of the proof of this allegation rests on them, and they must satisfy the Jury that at the time he was afflicted with such mental disqualification recognized by the law as incapacitated him to do this important act.

5th. The caveators object to the script on the ground that the alleged testator at the time of the execution of the script, was afflicted with *partial insanity*, technically called *monomania*, that he had the insane delusion that his relations had abandoned him, and that they were utterly unfit and incompetent to manage and preserve his estate, and that the script sought to be established as his will, is the result and offspring of such delusion, and therefore is no will, but an absolute nullity.

6th. It hence becomes important for the Jury to have a correct notion of what is meant by insanity, and especially partial insanity. It is extremely difficult, if, indeed, it be possible to give any very precise and satisfactory definition of insanity. It is so varied in its character, so diversified in its operations and effects upon the same and different persons, that no exact terms can be used to sufficiently compass its essence and character; it is rather to be described and explained than defined. The common and popular notion of insanity, that it means only that the person afflicted with it is a raving maniac, or that the light of the mind is utterly extinguished, and there exist only fatuity, and that otherwise every person is sane, is very erroneous, and falls short of the truth. Many persons sadly afflicted with mental disease appear, in some cases generally, and in others at intervals, to the common observer to be perfectly sane; indeed, it often exhibits itself in modes and forms so subtle that it almost eludes the observation of the most capable and expert observers and physicians. Mere strangeness of conduct or eccentricity of action does not imply insanity or unsoundness of mind. A perfectly sane man may be eccentric, peculiar in manner and actions, but he is aware of his peculiarities, and acts strangely and in his peculiar course from choice, and in disregard of what is generally thought as proper in manner or action, his conduct is not prompted by a diseased brain. But insanity means a diseased, a *morbid* mind or brain. Unsoundness of mind is a disease, and for the purpose of the case now before the court it will be sufficient to say that insanity or unsoundness of mind means such morbid disease or impairment of mind or brain as destroys the free and natural exercise of the *will*. This is insanity.

7th. It is insisted that the alleged testator was afflicted by *partial insanity*, or to speak more technically, with *monomania*. Partial insanity or monomania, is such disease or morbid impairment of the mind as destroys the free and natural operations of the will in regard to some particular subject or class of subjects. Although the whole brain may be to some extent affected, the morbid disease destroys the free operation of the mind towards a particular subject or class of subjects;—in regard to other subjects, the sufferer may have no diseased or morbid affection; towards other subjects he may be perfectly sane and act rationally, and with the most perfect propriety. In partial insanity the disease is exhibited exclusively upon particular subjects. This species of insanity is generally accompanied with insane delusion, and it is insisted that the alleged testator had such a delusion, and that the delusion operated in such a way as to destroy his testamentary capacity in the execution of the script. By an insane delusion is meant a persistent and morbid belief in supposed facts, which have no real existence, except in the perverted and distorted imagination of the sufferer, and a persistent and morbid belief in the existence of such supposed facts, against all evidence and probability to the contrary; and he acts and conducts himself on such supposed facts, however, logically upon the assumption of their ex-

istence. This is insane delusion, and delusion in this sense is insanity. A person so diseased, is essentially insane, mad on the subjects embraced by the delusion, although on all other subjects he may reason with perfect accuracy, and act and speak like a sane man. To illustrate: a man may believe himself to be the Emperor of France, or that he is the Christ. He is neither, but he persistently believes that he is the one or the other; he cannot be convinced to the contrary; he so believes against all evidence and argument; he acts and conducts himself upon the belief, and he is in this respect essentially insane, and the person while entertaining such delusion, might reason logically, and act like a rational man about all things apart from the delusion.

Indeed, in the case stated, the sufferer might reason correctly about himself as Emperor. Monomaniacs not unfrequently reason correctly from false premises. But it must not be understood that mere eccentricity of conduct, harshness of temper, revengefulness of heart, or a depraved, cruel and malicious disposition implies insanity. Such is not the fact. Here there is no disease. These characteristics might, under some circumstances, be evidence of insanity, but, in and of themselves, they do not imply a mental disease.

8th. Now let us apply these general principles to the case before the court. If the alleged testator, James C. Johnston, on the 10th of April, A. D., 1863, and on the 12th of September, A. D., 1863, was afflicted with insane delusion, as I have defined it to be, in respect to his relations who would naturally have been the objects of his testamentary bounty, if he had as alleged by the caveators, a morbid and insane belief, an insane delusion that his relatives had abandoned him, and that they were utterly unfit to preserve his great property; and if the script propounded was the result and offspring of such delusion; if the script proceeded from such insanity, then the jury should find that the script is not his last will and testament.

9th. But on the other hand, if the jury should believe that the alleged testator was not, at the time indicated, laboring under such insane delusion; if he was not insane, as alleged, although the disposition of his property made by him, may seem to be harsh, unkind and unnatural towards his relations, and though he may have made such disposition out of prejudice against them, then they should find that the script is his last will and testament.

EFFICACY OF ERGOT OF RYE IN PARALYSIS, CONSEQUENT ON DISEASES OF THE SPINAL CORD.—A sailor, aged forty, was admitted into the Cork Hospital under the following circumstances:

Motility was absolutely abolished from the waist downwards; the legs and abdominal muscles were in a state of rigidity, and the lightest touch caused screams of pain; the fingers and hands were spasmodically contracted, the contact of the bed-clothes was unbearable, profuse perspiration was present, with distressing priapism, pulse eighty, and a severe pain existed around the loins.

On inquiry it was found that after exposure to bad weather the patient had gone to sleep in his wet clothes. On the following day he suddenly fell down on the deck, with incomplete paraplegia, which had since rapidly attained the degree above described.

On his admission on the 14th of May, five grains of iodide of potassium were prescribed every four hours. On the following day the symptoms not having yielded, leeches and cupping were applied to the lumbar region, and three grains of ergot of rye were exhibited three times in the course of the day, the iodide of potassium being continued as before. On the 16th no improvement being perceptible, the same treatment was persevered in, the diet consisting of beef tea and bread. These remedies were continued up to the 11th of June, with the addition of tincture and extract of hyoscinus. The patient was now convalescent, and able to go up and down stairs without assistance. The ergot and iodide of potassium were then left off, and on the 14th he was so far recovered as to be able to climb a tree. On the 23d he was discharged, entirely cured.

It is difficult in this case to assign the respective share of each remedy in the cure, and it is, therefore, impossible to ascribe it solely to the good effects of the ergot. Mr. Townsend appearing, however, to be in possession of evidence sufficient to convince him of the efficiency of the drug, and his opinion in addition being founded on three other cases not before us, we must suspend our judgment; but meanwhile we feel justified in recommending our readers to test experimentally the value of a medicinal agent which is at present extremely popular in England for the treatment of acute spinal affections.—*Journal of Practical Medicine and Surgery.*

THE QUEEN v. JANE MAY.—We constantly read in books of travel of the extraordinary ease with which the act of parturition is performed by the human female when unspoiled by civilization. But a story has lately been investigated before Chief Baron Kelly and other of the judges in the Court for the Consideration of Cases Reserved, which quite matches any of the relations we have seen of the easy terms imposed by Nature on Indian squaws, bushwomen, and other interesting savages, when becoming mothers, Jane May was a female servant. She had frequently been charged by her mistress with pregnancy, but had systematically denied it. On October 25th she was sent to market with some poultry. Returning home in a cart, she asked the boy who drove her to stop and allow her to get out. She did so, and went into a recess in the hedge. In five minutes afterwards she was seen to follow the cart, and she walked home the distance of a mile and a half, and the following day went about her business as usual. A boy passed the hedge soon after the girl left it, and hearing something cry, found a newly born child in the recess. He was frightened, and told the next passer-by. However, when found a second time, the child was dead. The prisoner was taken into custody the next day. She said she was suddenly delivered, and did not see the child nor hear it cry, and she did not know whether it was dead or alive. At her trial at Bodmin she was convicted of concealing the birth. But the conviction is now quashed, on the ground that the case had not come within the provisions of the statute 24th and 25th Victoria, cap. 100, sec. 60.—*Medical Times and Gazette.*

DECAPITATION.—As is usually the case after every execution in Paris, the decapitation of the brutal murderer, Lemaire, has been followed by statements in the newspapers as to the persistence of sensibility for some time in the head after decollation. M. Bonnafont has, therefore, thought it worth while to give an account, in a recent number of the *Union Médicale*, of some experiments he made many years since in Algeria in order to dissipate the belief then so generally held in that colony. On the occasion of the decapitation of two Arabs, he had ready a vessel nearly filled with pulverized plaster, and placed on a low table, and a friend and himself were provided with a small speaking-trumpet and a very sharp-pointed probe. Immediately the first head was cut off it was placed in the vessel containing the plaster, in order to arrest as far as possible the hæmorrhage. The speaking-trumpet was applied to the ear of the defunct, and his name well shouted through it, but no movement of the eyes or of any part of the face manifested the slightest perception. The eyes remained dull and motionless, and the face colorless, and scarcely any contraction of the muscles was induced by provoking them with the pointed probe. The second head manifested in like manner signs of instant death; as, indeed, how could it be otherwise than that this must at once ensue upon the syncope induced by the section of the large arteries? The numerous relations to the contrary, as well as the bluish on Charlott Corday's cheek, M. Bonnafont regards as fabulous, and he points out that there is no analogy between this reputed retention of sensibility by the decapitated head, and the fact of ducks and turkeys being able to walk about for some time after decapitation, as shown in the experiments of Aldini and Eugene Sue.

THE QUARTERLY JOURNAL
OF
PSYCHOLOGICAL MEDICINE,
AND
MEDICAL JURISPRUDENCE.

Vol. I.]

OCTOBER, 1867.

[No. II.

ORIGINAL COMMUNICATIONS.

The Negro as a Soldier.¹

By SANFORD B. HUNT, M.D., *late Surgeon*
U. S. Volunteers.

ETHNOLOGICAL causes have always been active in the production of wars, and the existence of slavery was undoubtedly the ultimate cause in the war of the Rebellion. Yet, though it involved the deepest problems of race, it was not in itself a war of races. It was a struggle between two geographical sections of the same race and nation as to the just status of a foreign element which had become domiciliated among us by the act of our ancestors and which, in itself powerless, had by mere bulk and magnitude acquired

¹ For this very interesting and valuable memoir, the Editor is indebted to the U. S. Sanitary Commission, to whose archives it was originally contributed.

a controlling importance in national affairs. During this struggle the negro remained passive. His ideas of the struggle were not revolutionary, but religious. He believed and waited, his simple mind filled with the grand metaphors of Holy Writ, and his doubts all silenced by an implicit faith that in the Lord's good time his deliverance would come. When it was decided by Government to employ him as a soldier, he cheerfully enlisted as he found opportunity. But when, by accident of locality, he was unable to reach our lines, he remained a faithful and quiet slave. In no instance did he assume leadership, in no instance did he organize to strike a blow for his own liberty, Yet, in all instances, he was patiently loyal to his own race and to the cause of the Union.

This passivity is a moral element which might well create many doubts as to his efficiency as a soldier. Aside from the intemperate opposition of negro-haters, many of his calmer friends could only look upon the experiment as one involving serious risks of failure. Had he the physique to endure hardship? Could he acquire the manual of arms and perfect himself in tactics? Had he the necessary physical courage? Would he not, when his savage blood was up in the fever-heat of battle, entail disgrace upon our cause by acts of outrage? Was not the profession of the soldier in its essence too noble and manly for this pariah of the land? All thinking minds acknowledged these doubts, and with many they became at once convictions.

The scepticism entertained as to the capacity of the negro for the duties of a soldier found voice even in

the Acts of Congress authorizing his enrollment. The first Act only impliedly makes him a soldier. In the Act of Congress approved July 17th 1862, we find the following :

SEC. II.—*And be it further enacted:* That the President of the United States be authorized to employ **as many persons of African descent as he may deem necessary and proper for the suppression of the Rebellion, and, for this purpose, he may *organize* and *use them in such manner*, as he may judge best for the public welfare.**

A little later another Act was passed exhibiting the same spirit of hesitancy. We quote:

SEC. XII.—*And be it further enacted:* That the President be and he is hereby authorized to receive into the service of the United States, for the purpose of constructing intrenchments, or performing camp service or any other labor, *or any military or naval service for which they may be found competent*, persons of African descent, and such persons may be enrolled and organized under such regulations not inconsistent with the Constitution and Laws, as the President may prescribe.

Even here, the name of soldier is not employed, and the precedence given to his employment as a laborer expressively indicates the hesitation felt by Congress and the people. And with a just sense that in thus employing the negro they opened the way to questions of deepest moment that might lie beyond and incurred obligations which would change the political status of four millions of human beings, they enacted another section conferring freedom on the negro, his wife, his mother and his children, who should serve in our armies, provided always that the master or owner

of the negro should have enlisted in the service of, or in some way have aided and abetted the cause of the Rebellion.

Men looked at this startling innovation with different eyes. The earnest believer in a common humanity rejoiced; the careful statesman hesitated; the prejudiced denounced; and the pure scientist looked upon it as a grand experiment on a scale of such magnitude as to render its results decisive. Every step, therefore, of the enlistment of 180,000 negroes was watched, by friend and foe, with a lively interest.

Enlistments of negroes, however, had begun before the passage of the Act of July 17th 1862. The first black troops raised were recruited in Kansas—the Waterloo of slavery—by Col. James Williams, and his regiment for a long time was known as the “First Kansas Colored Volunteers” or, more familiarly, as the “First Nigger.” Col. Williams acted without sanction and, of course, under difficulties that would have crushed a man less indomitable. How he fed or clothed his men is one of the unsolved mysteries. How he disciplined them is known. In one case, three members of one company, intoxicated by their new position, committed an infamous outrage. Twenty-four hours later, they had been tried, convicted and shot, the firing detail being made from their comrades. The subsequent history of this regiment is one of active service, of hard fighting and of heroic courage.

The first grand movement in the enlistment of negroes was in the organization of the *Corps d'Afrique* at New Orleans, and immediately after that col-

ored organization became general in all the slave States occupied by our forces. Some regiments were also raised at the North, the 54th Massachusetts being a notable example. We believe that, with the exception of that regiment, all the negro troops were taken up as United States volunteers, including the two regiments raised in Kansas and known, up to the spring of 1865, as the First and Second Kansas Colored Infantry. But very many colored troops were credited to the quotas of Northern States. Counties and cities sent recruiting agents to the South, and by paying bounties induced negroes to credit themselves to New York, Boston or Philadelphia, as the case might be.

It was at first proposed to confine the use of these troops to the holding of sea coast and other fortifications, especially in malarial districts, with the idea that they were not liable to the diseases peculiar to those localities. As our experience enlarged they were employed in campaigns, battles and sieges, and were in many cases assigned to tasks requiring all the steadiness of veterans.

The conclusions which we are now justified in forming as to the value of the negro as a soldier affect his physique, his capacity to learn tactics, his providence or improvidence in the care and cooking of his food, his powers of resistance to hunger and fatigue, the diseases peculiar to him, if any, and those to which he is most usually subject, his morale, including his courage, cheerfulness and obedience, and finally his comparative intellectuality.

Aptitude for Drill. The well known imitative faculty of the negro, together with his natural fondness for rythmical movement, are elements of character which were promptly improved by the drill-officers by whom the recruits were instructed. The habit of obedience, inculcated by the daily life of the slave was also valuable, and it was soon found that, in the drill of the soldier, the negro lacked no essential. In cleanliness, however, there was a deficiency, though that was overcome in those instances where the discipline was rigid. Some of the regiments of the *Corps d'Afrique*, organized at New Orleans, were models of soldierly neatness and precision; while others, less carefully officered, were slovenly and careless.

Capacity for Marching. The large, flat, inelastic foot of the negro—almost splay-footed—was at first considered an objection; but experience has not sustained the idea. I have known a command of about 1,500 negroes to march 78 miles in 76 hours—part of the distance over a rough mountainous road—with remarkable ease and without increasing the sick-list, except from blistered feet. The general experience of army officers has decided that the negro marches as well as the majority of troops. His large joints and projecting apophyses of bone give a strong leverage to the muscles attached to or inserted in them. Yet in unfavorable circumstances there is reason to suppose that he fails to endure prolonged fatigue as well as the white man.

Endurance of Fatigue and Hunger. In response

to enquiries addressed by the New Orleans Agency of the Sanitary Commission, Surgeon Blackwell, 81st U.S.C.T., expresses the opinion that the negro bears fatigue better than the white man. Other officers, among them Surgeon Humphreys, of the 55th U.S.C.T. and Surgeon F. E. Piquette, in charge of the U.S.A. General Hospital for Colored Troops at New Orleans, state with equal positiveness, that he is inferior in endurance; that "he is, *at present*, too animal to have moral courage or endurance." After full discussion with all the leading surgeons in charge of negro troops in Louisiana and Alabama, Dr. Owen M. Long reports to the Commission that, "the colored soldier does not endure fatigue as well and as long as the white, but he can endure hunger for a much longer period." Dr. Long, in speaking of cases of exposure and hardships says:—"In this instance, the *morale* of the white man steps in and often aids him in overcoming the situation."

Such I believe to be the general opinion of observers. The negro loses the impulse of his natural gaiety, and becomes bitter and despondent, though if well-fed, as in the instance of the severe march mentioned above, he sustains himself well.

Powers of Digestion and Assimilation. The negro is a heavy feeder. His plantation ration was usually confined to bacon and corn meal, eked out by such vegetables and poultry as he was allowed to raise, or such game as could be found in stream or forest. In the army he speedily adapted himself to the ration, was uniformly fond of "hard tack" and preferred

bacon to beef. Even in the climate of the Lower Mississippi the tropical origin of the negro shows itself in some difficulty in maintaining animal heat. Hence, probably, their instinctive fondness for fat bacon, opossum and coon. All our reports concur, practically, in the opinion that the negro, under a fair ration, has good digestive powers and manifests no peculiar tendency to diseases of the alimentary tract.

Without being especially provident in the care of his ration, he is a very fair forager, and has a long list of foods not relished by the white soldier. He is also a liberal patron of the sutler. Negro regiments, in my experience, usually consumed all their ration, and as much more as they could conveniently obtain.

Immunity from, or Liability to, certain Diseases.—

One of the strongest arguments used in favor of the employment of negro troops was their supposed immunity from malarial forms of disease. There was a wide-spread belief in this idea, which has not been sustained by experience. We cannot better express our own convictions, resting on a very considerable observation, than by quoting somewhat at length from reports made to the Commission by Dr. Ira Russell, who has given this subject the most careful study at St. Louis, at New Orleans, and in Virginia. Dr. Russell says, in a report on the colored hospitals of Richmond, Norfolk, &c., that he found the opinion of numerous surgeons whom he consulted to be as follows :

“First. The negro bears injuries and recovers from wounds quite as well as the white man.”

"Second. Gangrene is of rare occurrence."

"Third. Malarial, typhoid, and bilious fevers do not occur more frequently or terminate more fatally than among the white race."

"Fourth. Pneumonia, pleuro-pneumonia and measles are more frequent and fatal than among the white race."

Two of the surgeons, Drs. Maillard and Ela, have had a good deal of experience among the colored population in the contraband hospitals at Portsmouth, Norfolk, and on the adjacent plantations. In reply to the query, "To what diseases is the negro more subject than the white man?" they replied, without hesitation, "To pneumonia and pulmonary inflammations." * * * * * "The system of slavery was calculated, in various ways, to stimulate child-bearing. The mother had no responsibility—no care for the support of herself or her children. Breeding enhanced her value—to be a *cheap* negro was a disgrace. But while the slave-holder understood how to stimulate child-bearing, his method of rearing children was very bad. The importance of cleanliness, good food, warm clothing, and proper shelter was but indifferently understood; hence many of these children grew up with impaired constitution, affected with scrofula and tuberculosis. Dr. Seymour thinks that eruptive diseases, such as small pox, measles and scarlatina, are severe with colored children, and many die from pulmonary complications."

There is, or was, among inexperienced medical offi-

cers, a belief that negroes are not fully amenable to remedies. Sudden and unaccountable deaths frequently occurred in the hospitals, and came to be considered a negro peculiarity. In some cases the superstition of "fetichism" was responsible for this. The patient would believe himself possessed with a devil, or to have been subjected to the baleful influences of the unholy charms of some witch; he thus became hopeless, despondent and apathetic. Upon these points we again quote from Dr. Russell:

"I have given careful attention to the symptoms and pathology of disease as exhibited in the negro, and as modified by his peculiarities of constitution, habits and modes of life. I have also made careful inquiries of surgeons on duty in negro regiments and in the negro hospitals at St. Louis, Mo., Nashville, Tenn., Washington, D. C., Alexandria, Richmond and Hampton, Va."

"All the intelligent surgeons agree with me that a thorough knowledge of the habits and idiosyncrasies of the negro are of the utmost importance in order to understand and successfully treat his diseases. Much of the lack of success in treating disease among this unfortunate class of our population is undoubtedly due to ignorance of such facts. Two hundred years of servitude, the implicit obedience required, the exemption from all care and anxiety to provide for the future, the extinguishment of all hope of improvement in his civil or social relations, has produced marked physical and moral effects. Self-reliance and exercise of the will has never been cultivated or formed

any part of his education. His highest ideal of enjoyment has consisted in freedom from toil and the gratification of the lower animal instincts."

After alluding to various other and obvious hygienic causes affecting the negro, Dr. Russell says:

"When sick, he will take neither food or medicine, unless administered by some other person. Many sick negroes have died in consequence of this neglect, much to the astonishment of the physician, who had faithfully prescribed all that was needed of both. He is superstitious, and believes in charms and diabolical agencies, and often imagines that he is the victim of some supernatural influence, from which it is impossible to extricate himself. When under the influence of this hallucination, he becomes indifferent, despondent, and gives up in utter despair, dying without apparent cause, leaving the impression on the physician's mind of lack of vital power, when, if the case had been thoroughly understood, the explanation would have been found in the mysterious influences of the mind working upon the body.

"But little reliance can be placed on the subjective symptoms as given by the negro. His ignorance of terms and his obscure and indefinite mode of describing sensations only serve to confuse and perplex. Trivial symptoms are greatly magnified, while grave ones are entirely overlooked. The intensity of physical suffering is his measure of danger. The intelligent physician soon learns that he must treat a negro as he would a child. At a glance, he knows that the pale ashen color of the skin indicates disease, while

the sleek, glossy hue is the sure sign of health. He gives but little attention to the symptoms described by the patient, but resorts at once to the physical signs. When such precautions are taken and careful investigation made but little difficulty will be experienced in properly diagnosing the diseases of the negro."

It will be seen, we think, that the conditions of the negro thus discussed, which certainly impair his efficiency or his durability as a soldier, are not intrinsic to his race, but are to a great extent educational and may be expected to disappear under the energising influences of freedom and the teacher. Fortunately even this expectation has already been tested and proved to be correct by comparison between the free negro recruits from the North and the grossly ignorant slaves enlisted from the plantations of the South. The difference, says Dr. Russell, consists in the greater dependence of the recently enlisted enslaved upon the care of their officers and indifference to personal necessities and comforts. Surgeon-General Dale of Massachusetts remarks :

"The difference between the colored volunteers recruited North and colored regiments raised South was very great and more strongly marked than any characterizing white soldiers as compared with black. The blacks born and recruited South having just emerged from the condition of servitude imposed upon them since birth are far more dependent than the colored regiments recruited North, showing that the further this race has been removed from the depres-

sing influences of slavery, the closer has become their approximation to the whites in their physical development and capacity for becoming enduring soldiers."

It was also observed that northern negroes when removed to the South presented the same liability to malarial disease that attended the whites. But in the opinion of the writer, this was also true of those negroes raised at the South. Dr. J. C. Nott, of Mobile, denies that they have any exemption from malarial disease. In my own experience, the ratio of malarial and typho-malarial disease was about the same in all three classes, whites, northern negroes and southern negroes. This corresponds also with the facts reported by African travellers, Barth, Andersen and Reade, who speak of great mortality from intermittent and bilious fevers of the Africans in their native jungles. The conclusion reached by Forry, Nott, Blodgett and Drake, that "there is no such thing as acclimation to malaria," finds no exception in the negro. This is the uniform testimony of all surgeons in charge of colored troops who have reported to this Commission.

The weight of evidence seems to place them upon the same level as the white, in regard to his liability to malarial disease.

In *pulmonary diseases* we find the only excessive cause of mortality in the negro which seems to be inherent to his constitution. We have already spoken of the frequency of eruptive diseases among negroes, but this is due, evidently, to neglect of vaccination and to the protection against measles and scarlatina, afforded them by the isolated life of the plantation

and the ease with which any particular focus of contagious disease could be quarantined under the social system of the South. And the fatality of these diseases among negroes is almost uniformly ascribed to their complication with pneumonic affections, intercurrent or secondary.

While it must be admitted that temporary causes had much to do with the frequency of lung diseases among negroes, it will still be found that they are vastly more liable to this source of mortality than the whites. In the process of escaping from his master to reach our lines, the slave was often exposed to great hardships, and in the transition period between his first day of freedom and his final enrolment as a soldier, these exposures were too often continued at a vast expense of life; yet it was found beyond, that when fairly enlisted, clothed and fed, and subjected to the same methods of life as the white soldier, he still exhibited a far greater ratio of death from pulmonic disease. On this point we quote *in extenso* from the valuable researches of Dr. Russell:

“From the records of five hundred autopsies (four hundred and seventy-two of which were of colored men) made at Benton Barracks, Mo.; Wilson Hospital, Nashville, Tenn.; and L'Ouverture Hospital, Alexandria, Va., it appears that pneumonia and pleuropneumonia were found to exist, and were usually the cause of death, in four hundred and six out of the four hundred and seventy-two cases. Tuberculosis existed in thirty-seven cases only. All other diseases eight cases.”

"In the Army of the Potomac, and in the hospitals at Alexandria and Fortress Monroe, the colored troops suffered much less from pneumonia than in the west; and the same is also true of the white troops. Even previous to the war, the old army suffered much more from it in the valley of the Mississippi than on the Atlantic coast. Especially was this the case at Jefferson Barracks, near St. Louis, Mo."

We are compelled, then, to believe that, independent of external causes, the negro is far more susceptible to pulmonary disease than the white. The physiological cause of this cannot, perhaps, be demonstrated; but great weight is due to the hypothesis that he has a tropical, or smaller, lung. In all, or nearly all, the autopsies we have quoted, the weights of the lungs were taken; but those weights were so much invalidated by the presence of various forms of solidification in the organ, that we are unable to use them in this connection. A careful series of weights of normal lung, to contrast with weights of an equal number of whites, is a great desideratum. It should be re-inforced by measurements and the volume and the expansibility of the living thorax. At present we are only able to suggest that, if the Arctic lung requires a capacity equal to the absorption of oxygen enough to convert into carbonic acid gas forty-five or fifty ounces of carbon daily, in order to maintain the animal heat in those cold regions, it would be in accordance with the economy of nature to suppose that the oxygen capacity of a tropical lung would be smaller than the Arctic, in the same ratio as the

amount of carbon required to maintain animal heat in the sultry climates of the Equator. But this is not yet proven. The comparative frequency of tuberculosis in the two races, is by no means understood. Most surgeons in contact with the negro, are of the opinion that he, especially the mulatto, is predisposed to consumption. This opinion is pretty nearly universal among them, and yet Dr. Russell, from his own studies, doubts the truth of the theory. Dr. Harris, of Cleveland, Ohio, himself a negro, and a close student of his race, is emphatic in the opinion, that the admixture of races does not impair physical endurance or fecundity, but, on the contrary, promotes both. Against these opinions rests a pretty general conviction that tuberculosis is a scourge of the negro, especially the mulatto, and that the fecundity of the latter is not equal to that of pure bloods. Common observation shows that the number of quadroons is much more numerous than that of "octoroons," and that the number of mulattos is much greater than that of quadroons. If there were no impediment of fecundity, the reverse would obtain. But this study lacks all the data which would ensure an exact and intelligent opinion.

Intellectual capacity.—The negro, both by nature and education, is social and gregarious. His fondness for companionship is notorious and adds much to his adaptability to the crowded life of the camp. The negro encampment is always a cheerful and chatty place, enlivened by music, dance and sport. Nostalgia, even in the married soldier, is almost unknown, and, when he is well and well fed, I have never seen a case.

His intellectual acuteness has been very much blunted by centuries of ignorance and servitude, and it is now impossible to define his relative position—as a native and uncontaminated being—in the scale of races. His history in the land of his origin is one of continuous barbarism with occasional wild outbursts of the brute element. On this continent, we behold a patient, long-suffering, religious man, who, under circumstances of great provocation and frequent opportunities, rarely commits those graver and more beastly crimes which disgrace human nature. His record during the war of rebellion is wonderful in its gentleness and Christian forgiveness. He has “waited patient on the Lord” and not until the prison gates were thrown open did he attempt to come out into the light of freedom. It is with him as we find him now, and not with his barbarous ancestry, with him under the dispensation of Christ, and not under the curse of Ham—that we have to deal in this era.

It would be grossly unfair to subject the negro to a comparison of intellectual capacity based on his present manifestations of mental acuteness. In the slave States he has been held in ignorance by law; in the free States subjected to a constant sense of inferiority. All the paths of competition have been barred against him, and, though in the North, he has in occasional instances raised himself to prominence in intellectual combat, it has been over obstacles which might daunt the most enterprising.

We do not expect from the besotted peasant of feudalism any vindication of his membership in a superior

race. How few are the cases in which the agricultural peasant of Russia, France, or even England, has achieved intellectual distinction! From our own feudalism, we can anticipate no different result. We must turn, then, from the illiterate—almost inchoate—intellect of the feudalized negro, undeveloped and uncomprehended as it is, to some other means of comparison. However deficient it may be, it is nearer the truth than it would be to demand energy, enterprise, and political sagacity of one who has not yet made acquaintance with the spelling-book.

Three modes of ascertaining the superiority or inferiority of races have been devised which have reference only to physical facts and depend for their correctness solely on the honesty and accuracy of the observer. One of these—that by external measurements of the cranium—is in itself essentially faulty, in that it makes no allowance for the thickness of the skull, though it has developed the fact that the Germans use larger hats than the Anglo-Americans of the Northern States; these larger hats than the same race in the Southern States; and these, again, very much larger than those worn by the Spanish-Americans of New Mexico, etc. The English infantry hat sent to the colored West India troops was found much too large.

A second means of measuring intellectuality rests, like the former, on the size of the brain, and is based on the supposition that there is a direct ratio between the mental and the cubic capacity of the cerebral mass. Prof. Samuel George Morton, the distinguished

craniologist, has taken the internal measurements of more than 600 skulls, by filling them with peas or shot, from the foramen magnum, and then measuring the peas or shot by the usual method. His plan is ingenious and only lacks an accurate knowledge of the race represented by the skull and a far greater number of observations to have a decided practical value.

The third plan is to ascertain the weight of the brain by post-mortem examinations, and is, *per se*, the more reliable.

All these measurements presuppose that the size and weight of the brain is the measure of its intellectuality—a theory probably correct in the main. The objections are these: The mental capacity of a brain probably depends upon its relative portion of grey substance; and, in two brains, of exactly equal weight and measurement, these may differ materially. Again, the *distribution* of the volume of a brain, whether in the anterior or posterior regions of the skull, may materially control its intellectuality. But all analogies and contrasts go to prove that, as a rule, the size of the brain has much to do with its mental power. Daniel Webster's gigantic head contained 122 cubic inches of brain; the Hottentot and the Australian have only 75 cubic inches. The Tottecane Indian, now perished from the face of the earth, had 77 cubic inches; his conqueror, the barbarous North American, had 84 cubic inches.

For the sake of comparison we give, succinctly, the measurements in cubic inches as established by Morton:

	Mean.
The Teutonic family, including English, Germans and Americans (30 crania), has, cubic in.,	92
The Pelasgic, Celtic, Semitic, &c., have,	88
The Malays, Chinese, Hindostanees and Egyptians,	83
The American Tottecan Indian,	77
The American barbarous Indian (161 crania),	84
The native African Negro (62 crania),	83
The American Negro (12 crania),	82
Hottentots and Australians,	75

In contrasting the important races we find that the conquering Teutonic family outnumbers all the rest; that, by a singular parallelism, the conquerors (barbarous Indians) who preceded us on this continent had seven inches the advantage over the annihilated Totteicans, and that the now perishing Indian has eight inches less of brain than his conqueror, the Teuton. And, not to be reconciled with the theory of a direct ratio between size and intellect, is the strange fact, that the Tottecan, the semi-civilized Indian, who built the mounds of the West and the now buried cities of Mexico and Central America, was driven out by a conqueror who, with larger brain, has never manifested any tendencies toward civilization.

The third method of estimating intellectuality by material conditions is, by ascertaining the weight of the brain in different races. Up to the present war

the number of brains carefully weighed by anatomists was small, nor had any attempt been made to educe any difference that might be assigned to race. I have carefully collated all the records of weights accessible, and find, in all, 278 brains of white Europeans, mostly English and German, and given on the authority of Clendenning, Sims, Tiedemann and Reid. These tables give the mean weight of the white European brain at $49\frac{1}{2}$ ounces avoirdupois; the greatest weight given being 65 oz., and the smallest, 34 oz.

Fortunately, in the same series of autopsies from which we have quoted in our statement as to the frequency of diseases of the lung, we find the weight of the brain given in 405 cases, of which 24 were white and 381 were black. This number is larger than that of all the other brain-weights heretofore published, and is sufficient for satisfactory generalization. It has, moreover, a special value in giving the *grade of color*, whether black or mulatto, &c. The labor of this great number of autopsies was performed under the direction of Surgeon Ira Russell. The mode of classification has suggested itself to the writer.

ETHNOLOGICAL TABLE, derived from 405 Autopsies of White and Negro Brains. Made under the direction of Surgeon Ira Russell, 11th Massachusetts Volunteers.

	Number of Autopsies.	Grade of Color.	Average Weight of Brain.	Maximum Weight of Brain.	Minimum Weight of Brain.	Brains, 60 ounces and over.	Brains, 55 and under 60 ounces.	Brains, 50 and under 55 ounces.	Brains, 45 and under 50 ounces.	Brains, 40 and under 45 ounces.	Brains, 35 and under 40 ounces.	Brains less than 35 ounces.
	24	White,	52.06	64	44½	1	4	11	7	1	.	.
	25	¾ " .	49.05	61	40	1	.	10	12	2	.	.
	47	½ " .	47.07	57	37½	.	2	13	19	12	1	.
	51	¼ " .	46.54	59	38½	.	2	10	22	11	6	.
	95	⅓ " .	46.16	57	34½	.	1	15	50	21	7	1
	22	1-16 " .	45.18	50½	40	.	.	3	10	9	.	.
	141	Black,	46.96	56	35½	.	5	42	51	28	3	.
	405	.	.	.	.	2	14	104	171	94	17	1
Autopsies of Clendenning, Sims, Reid, and Tiedemann,	279	Whites, collated from various sources, .	49½	65	34	7	28	99	97	39	7	1

The following laws would appear to obtain in the above table.

1st. The standard weight of the negro brain is over five ounces less than that of the white.

2d. *Slight* intermixtures of white blood diminish the negro brain from its normal standard ; but, when the infusion of white blood amounts to one-half (mulatto), it determines a positive increase in the negro brain, which in the quadroon is only three ounces below the white standard.

3d. The percentage of exceptionally small brains is

largest among negroes having but a small proportion of white blood.

The weights given in the table are much larger than those given by European anatomists, so far as the white race is concerned. Yet certain correspondences induce us to believe that such a difference actually exists and would be verified by a more extended research. In the vital statistics of this work the weight of the American soldier is found to be 5½ pounds more than that of the French soldier, and 18lbs more than that of the average English recruit of the age of twenty-one years. Again, there is a curious confirmation of Morton's measurements of the internal capacity in cubic inches of the human cranium. If, as he states, the standard capacity of the teutonic cranium is 92 cubic inches, and that of the American negro 82 cubic inches, then, to prove this relationship, the white brain weighing 52 ounces the negro brain should weigh just 46.40 ounces. It actually weighs 46.96 ounces. This is founded on the American measurements only. If we group together the whole mass of weights of whites, foreign and American, we shall have 302 brains of whites, average weight 49.7 ounces. Comparing this with the weight of 141 pure negro brains we find a difference of 2.74 ounces.

Supposing the matter of weight to be the essential condition of intellectuality, the average white has a competitive advantage over the average black of 5½ per cent. ; or, taking the 24 brains of white Americans as the standard of comparison, the competitive advantage of the white is 9½ per cent.

Two important questions present themselves in this connection.—1st. Morton's measurements seem to show that during two centuries of servitude the negro brain, if it has not diminished in size, has not increased under the influences of slavery. Therefore the crucial experiment of the effect of freedom and education has only just began. We cannot judge the ultimate capacity of the negro from that which he has thus far manifested. And 2d, so far as the 24 white brains enumerated can prove anything, they show that the American is heavier and larger than the European brain. If *it* has enlarged under our institutions, why may not the negro brain, subjected to new and invigorating influences, also increase its size?

The number of white brains weighed is too small for generalization. It is simply a suggestion, not a scientific fact. 'To test it we must look to other conditions and inquire how far the climate and policy of the United States have affected or changed other and easily recognizable physical forms of man. The American is the child of Europe. Other things being equal, we should expect him to be a mere repetition of the European.

But there are evidences that the American, in founding a new nationality, has also established a new type of manhood. Of nearly 26,000 recruits from the New England and North Western States, Mr. Elliott informs us that the mean height was 5 feet 8½ inches. Of 27,853 recruits to the British army at home in 1860 the average height was 5 feet 6½ inches. The average height of the French army, for a series of years,

was 5 feet 5½ inches. Here, then, we find the American soldier is the tallest of the three, and so far as we can examine weights, we find him the heaviest, being 5½ pounds heavier than the French and 18 pounds heavier than the British soldier. In fine, there seems to be some reason to believe that the human brain, in the case of whites, has been increased in size by its transplantation to this continent, while in the case of blacks it has made no progress, but has, perhaps, deteriorated under the influences of slavery.

As between the two races, the problem is: Does the large brain by its own impulses create education, civilization and refinement, or do education, civilization and refinement create the large brain? This problem might be solved by a series of researches in the weight of brain of the poor whites of the south, known as "sand hillers," "low-down-people," or "crackers." With them civilization has retrograded. They came of a good stock originally, but have degenerated into an idle, ignorant and physically and mentally degraded people. Their general aspect would indicate small brains. If they are small it is due to the absence of educational influences.

In the present state of science, we can only refer to general opinion, which leans to the belief that it is within the power of educational causes to modify the form and size of the human brain to a considerable extent, and that the competitive success of the freedmen of this country rests upon the effort that may be devoted to their mental and moral elevation. They have already the same cranial capacity with the Hindos-

tanees, who have developed a high civilization, a profound philosophy and a rational religion.

We have thus stated, as elaborately as our limits will permit, the differences which exist between the black and white races. It will be seen that, for the purposes of the soldier, he has all the physical characteristics required, that his temperament adapts him to camp life and his morale conduces to his discipline. He is also brave and steady in action. His only disqualifications are found in his greater liability to pulmonary and exanthematous diseases and in the lack of education—perhaps of native intellect—that forbids his attainment to the rank of a commissioned officer. Neither of these objections are of sufficient moment to throw him out of the lists, and, in all subsequent wars, this country will rely largely upon its negro population as a part of its military power.

Review of the Trial of Mary Harris, Indicted for the Murder of Adoniram J. Burroughs.

By R. L. PARSONS, M.D., Superintendent of the N. Y. City Lunatic Asylum.

ON the 30th of January, 1865, at about the hour of three in the afternoon, a young woman named Mary Harris went to the Treasury Department building at Washington, inquired for Adoniram J. Burroughs, one of the clerks of the department, waited quietly in an obscure position until, having finished the duties of the

day, he passed the place where she was sitting, when she suddenly arose and fired at him two pistol shots, one of which took effect, causing his almost immediate death. The young women then walked slowly out of the building, when she was taken into custody. It was soon ascertained that the deceased had formerly been a lover of the girl who caused his death, and further that she had made the journey from Chicago for the express purpose of seeing him, but with the avowed intention of instituting a suit against him for breach of promise of marriage.

Thus much regarding the case, with various unimportant particulars and incidents, was soon made known to the public, and the impression seemed to be almost universal that it was a case of murder induced by jealousy and a spirit of revenge for a real or supposed injury, and further that this injury was desertion and perhaps seduction. At first some regarded more particularly the supposed disappointment and injustice to which the girl had been subjected, and were inclined, in a certain measure, to excuse, if not to justify, the deed, while others, looking rather at the enormity of the crime, the legal protection already given to women in such cases, and the danger to public safety that must result if persons should be allowed thus to avenge their own real or supposed wrongs, were vehement in their condemnation of the act and in their demand for the punishment of the perpetrator. When, however, the case came up for trial and it became known that the plea of insanity had been set up, whatever of sympathy or of consideration there might

have been for the unfortunate girl, seemed to give way to a feeling of resentment, that a plea which had been so often interposed of late to shield the guilty from the just consequences of their crimes should again be set up for a similar purpose. The plea had come to be looked upon with suspicion even in cases where there were well attested evidences of mental aberration, the opinion of experts being considered of less weight than the common-sense views of the community at large. The belief that the plea was untenable and only set up in the want of a better was not confined to the unprofessional public, but was shared by physicians and even by those who had made the study of mental diseases a specialty. Indeed, whatever facts are presented to our minds, whatever mental reservations may be made in favor of facts as yet unascertained, we still do and must pass some sort of judgment in relation to those facts. Here a judgment adverse to the theory of insanity obtained.

After a long and tedious trial, conducted by advocates of rare ability, in which the facts in the case were fairly brought to light, and aided by the opinions of medical experts of known experience, the jury, after a consultation of five minutes duration, brought in a unanimous verdict of *not guilty*.

After the trial, no less than before, the popular impression still obtained that Mary Harris was not insane, but that a cunningly devised fiction had been foisted upon the jury in regard to the mental condition of the defendant at the time of the act. And this impression was not confined to uneducated minds,

but was shared equally by men of sound judgment and intellectual culture, and even by experts in the specialty of mental diseases, notwithstanding the testimony of an esteemed member of their specialty substantiating the fact of her insanity.

The principles involved in the decision of this case are of great importance, and now that the lapse of time gives opportunity for the judgment and the reasoning powers to act without being unduly influenced by the emotions incident to an immediate contemplation of the persons and facts, a review of the case will, no doubt, be of service to mental science and to the jurisprudence of insanity.

It is proposed, then, to give such an abstract of the testimony bearing on the question of insanity, together with the professional opinions relating thereto, as shall embrace all the points necessary to an intelligent and just re-consideration of the case; and it is hoped that any criticisms that may be made, or opinions that may be expressed in the course of this discussion, will not obscure, if they do not elucidate, the subject.

In opening the case for the prosecution, the District-Attorney stated the following untenable propositions, viz. :

"It is a vulgar error that insanity renders a party irresponsible for his conduct."

"Every man who commits a crime is at the time more or less insane. Reason for the time is dethroned, and passion holds the sway."

"Motive, therefore, you will observe, is wholly incompatible with the idea of insanity."

Now the unfounded assertions of an advocate may be of no special importance in a scientific point of view, and yet they are proper subjects of criticism, as they cannot fail to exert an improper influence with the jury, either for or against the cause he advocates. If such statements are allowed to pass without notice or correction, through inadvertence or a belief that they are too trivial and too clearly unsound to be deserving of notice, the jury may still adopt them as parts of their belief or of their supposed knowledge. If, on the other hand, they are refuted, or their untruthfulness is clearly apprehended, the jury are led to suspect the weakness of the cause, or to doubt other statements that may have a foundation in truth. Whatever may be the policy or practice of opposing counsel, the sole object of the prosecuting attorney in a criminal case should certainly be to elicit truth, and to subserve the ends of justice.

That insanity renders a party legally irresponsible for his acts is not a vulgar error, nor, indeed, an error at all. If the assertion were true, it would of itself constitute a sufficient rejoinder to the plea of insanity. And yet, in a certain modified sense, the insane are responsible for some of their acts, so that they may justly and properly be made to suffer the consequences that naturally flow from these acts. For instance, an insane patient who defaces or destroys the walls or furniture of his room may be removed to plainer and stronger apartments, and given to understand the true reason for such removal. In many cases he will appreciate the justness of the change, and modify his future

conduct accordingly. In all this he understands the relation of cause and effect, and is influenced by motives. To an extent he acknowledges and feels himself responsible, and yet in no such sense that he could be properly *punished* for the acts in question, which were at the time and with the motives which then existed, uncontrollable.

The assertion that motive is wholly incompatible with the idea of insanity, has been incidentally alluded to and contradicted. In most cases, indeed the insane act as really and truly under the influence of motives as the sane. But motive, if subjective, may be the offspring of a diseased mind, of delusion or of insane antipathy; if objective, it is then only motive as it influences the mind, and in the case supposed as it influences an insane mind. Not only do the insane usually act under the influence of motives, but they may act from a motive of revenge even, and that either on account of a real or of a supposed injury. For instance, a patient who is incoherent, has marked delusions and is by turns excitable and melancholic, entertains the idea that his physician or attendant is alone responsible for his detention, says he will have revenge, and makes repeated attempts to kill the person by whom he supposes he is unjustly deprived of his liberty, although others with whom he is associated, he never molests. Were he subjected to some real indignity or made to suffer some real injury, the feeling of revenge and acts depending on this motive, would be none the less natural to an insane mind.

The statement that every man who commits a crime

is at the time more or less insane, is so manifestly incorrect, and so 'opposed to what is known to be the universal belief of mankind, that it would be simply foolish were it not immediately followed up by the propositions that passion is a short madness, and that (then) reason for the time is dethroned, and passion has its sway. Here there is an evident intention to confound or obliterate the distinction between normal and healthy mental action, and the action of a diseased mind, and thus convey an erroneous impression to the minds of the jury, by a quibble founded on the well-known aphorism that anger is a short madness. Such practices on the part of the prosecuting attorney cannot be too strongly deprecated; and deserve, at least, a passing notice.

An analysis is here given of the principal points bearing on the question of insanity. The circumstances immediately connected with the homicide, however, are not classified, as they will be better apprehended if considered together.

1. *Conduct of the Defendant at the time of the Homicide.* It appears in evidence that the defendant on the 30th day of January, 1865, went to the Treasury Department, at Washington, between the hours of three and four in the afternoon, inquired, in a ladylike manner, if there was a gentleman employed in the Department by the name of Burroughs, pointed out the name of the gentleman she wished to see on the register, was admitted, went to the room where Mr. Burroughs, with other employees was engaged, looked in, appeared much excited at the time, then stationed herself in the hall, waited quietly in a somewhat obscure position until deceased passed her, in company

with a friend as he was leaving the building, when she fired two shots at him with a small Sharp's revolver, the first of which took effect, causing his death in a few moments thereafter. She was then seen to walk deliberately from the hall, mistook her way, retraced her steps, and was again seen by the same witness who describes her as colorless, and pale and with her features set. She was then taken into charge by an officer, and placed in a room where she was immediately seen by Secretary McCulloch. She was then excited, asked "Is he dead?" said "Why did I do it? Why did I do it?" Seemed to be in despair—in a frenzy, her agony seemed too great for tears. She talked freely but for the most part in ejaculations. The officer who took her to the jail testified that when he saw her she looked wild, had her hands in her hair and seemed in great mental agony. She stated to him that this man had ruined her, had caused her to be driven from her home and friends, had seduced her and taken her to a bad house in Chicago and that she had told him that if he didn't comply with his promises she would have revenge on him at the risk of her life. She seemed in great distress and was very weak. To Secretary McCulloch, however, she stated, with a great deal of emphasis, that Burroughs had done her no other injury than the violation of his engagement.

2. *Natural, Physical, and Mental Characteristics.*—She was of nervous temperament and enjoyed uniform good health. Was of an active turn of mind, her intellectual faculties were well developed, she was cheerful and good-natured and was generally liked by those who knew her.

3. *Facts that may have acted as causes of Insanity.*—When ten years of age she became acquainted with Burroughs. He caressed her and paid her great attention when a child and afterwards became her acknowledged and accepted suitor. He had entire control of her affections. There was a positive engage-

ment of marriage between them. A correspondence was carried on between the parties as lovers until a short time previous to the marriage of Burroughs to another woman. The desertion was entirely unexpected. A few days before she became apprised of the marriage of Burroughs she received two letters signed J. P. Greenwood asking an interview with her at a certain house which she ascertained to be a house of ill-fame. She afterwards became convinced that Burroughs had written these letters himself and with the design, in some way to do her an injury. Called at the house herself in company with her friend Miss Devlin, remained at the door and made inquiries which confirmed her in the belief that Burroughs had endeavored to entice her there. Was deeply excited on becoming convinced of the above, and ever afterwards when the affair was mentioned. Her mental depression was such that it exercised a marked influence on her physical health, diminishing her sleep and impairing her appetite. On visiting the Rev. Dr. Burroughs she conceived the idea that he and his brother, her former lover, had contrived a plot against her in connexion with the assignation house. Was impressed with the idea that her long intimacy with Burroughs, his desertion, and the fact of her going to the assignation house would damage her character. Thought much of this and long contemplated a suit against Burroughs for breach of promise of marriage to vindicate her character. She had often said during the summer previous to the marriage of Burroughs that they would soon be married. Her own parents were so opposed to her intimacy with Burroughs that they cast her off entirely. This fact also caused her to feel the desertion more severely.

4. *Physical Causes that may have led to Insanity.*—Her health began to fail immediately after the marriage of Burroughs. She became thin and sallow—lost appetite and sleep. Her menstrual functions be-

came deranged, so that she suffered severely from dysmenorrhœa. From having a healthy, ruddy look, she became pale, indicating a certain degree of anæmia, or derangement of the circulation. Her sufferings from dysmenorrhœa were so great as to cause much nervous irritability and wildness of look.

5. *Facts indicating a Disturbance of the Intellectual Faculties.*—Was at times abstracted, and, to a certain extent, incoherent in her answers. Would interrupt a conversation by making irrelevant remarks. Had the belief that her former lover and his brother had some plot against her—thought they intended to pick her up in the street, and carry her away where she would never be seen. Was apprehensive of personal violence from the men who murdered President Lincoln. Thought she had seen Burroughs in the jail since her imprisonment. At one time peremptorily demanded her release from prison.

6. *Facts indicating a Disturbance of the Affective Faculties.*—At times became almost frantic—would not know what she was saying or doing. Became less cheerful—was mentally depressed. At times showed indifference towards, or even displeasure with, those whom she knew to be her friends, and this without any rational cause.

7. *Physical condition of Defendant, as bearing on the question of Insanity, so as to render the hypothesis probable.*—All those points mentioned as physical causes which may have led to insanity. These causes continued up to the time of the trial. Great disturbance of the circulating system—the top of her head at times being very hot, while the extremities, and even the forehead, were unnaturally cold. Great dilatation of the pupils. Several attacks of erysipelas of the head, indicating, at least, serious physical disturbance as a cause. The heat of her head was so great that she would sometimes sit, in winter, with a strong draught of air blowing upon it, when a gentleman at

her side found himself uncomfortably chilled, although much more warmly clad.

8. *Insane Acts*.—Arose early one morning; leaned over Miss Devlin, whom she supposed asleep, and said, "I have to leave you; but I am sorry to have to leave you." When stopped, said she was going to walk on the lake shore. Repeatedly tore garments and books in pieces, and at one time attempted to cut in pieces a fancy silk quilt. Attacked her friend, Miss Devlin, with a carving-knife, without provocation. Threw a brick, covered as a pincushion, at a customer, and without provocation. Would often lay all night, in winter, on the floor in a cold room, and without any covering. Would hold her friend firmly by the wrists, and gaze at her fixedly for ten or fifteen minutes at a time. These acts were committed during paroxysms of excitement, which sometimes lasted five or six hours. At such times she was often noisy, and needed restraint. Several times struck her friend violently with a window-brush without cause. It would seem that all these acts were overlooked and excused by her employers, as they did not consider her responsible or capable of self-control when she did them.

A connected statement of the history of the defendant is here added, in order that the relations of the events in time may be better understood. This history was carefully prepared from the evidence by Dr. Nichols, at the instance of one of the counsel for the defendant. It was intended for use as a hypothetical case, but agrees strictly with the evidence given.

"A girl's parents are poor and humble, but entirely respectable. She did not, in childhood, enjoy the advantages of much school education, nor of a refined

moral training. At the tender age of about twelve years she is employed to wait upon the customers of a gentleman's furnishing store, kept by a respectable woman of mature years. She is soon noticed and esteemed by some of the most respectable people of the town in which she resided, for her marked intelligence, sprightliness, amiability, and engaging manners, and for an elevation of character much above that usually produced by her limited advantages. About this period she made the acquaintance of a single man, of about twice her age, of good natural abilities, education, and social position, who at first showed her the most devoted and flattering personal attentions; and when they became separated for longer or shorter periods, wrote her frequent letters, which abounded in the strongest expressions of praise, endearment, and love, till he became 'master of her heart and affections,' and she did not seem 'desirous to increase her acquaintance on account of her engagement with him,' but appeared 'to have no other motive or aim in life than to please' the man to whom she was affianced. She received the attentions of her lover in opposition to the decided wishes of her parents, because she was a Catholic and he a Protestant. Several definite periods were, in the course of time, fixed for the marriage, but it was each time deferred for reasons assigned by him. In the course of their engagement she, at the suggestion of friends, left the town in which her parents resided, to avoid their persecution on account of it (the engagement), and went to reside in the town in which he resided, where he continued the personal attentions heretofore described, and when he left the latter town he corresponded with her as before. He once took her from the last-named town to that in which their acquaintance commenced, because, as he alleged, they were to be married in three weeks, and he did not wish the 'woman he was to marry to act as clerk any longer.'

"In the autumn of 1863 a great change in the history of these two persons took place. Soon after the receipt of an affectionate letter from him, this girl found that the man to whom she had been so long affianced, and to whom she had given all the love and trust of an ardent and affectionate nature, had, without notice from him or anybody else, and without the least suspicion of any change in his affection for her, or purpose of marrying her, married another woman. She also, about the same time, became convinced that he endeavored to entice her into a house of ill-fame, in order, as she believed, to destroy her character, and have an excuse for breaking his engagement of marriage with her. From the moment of this disappointment, accompanied by a supposed endeavor to destroy her character, a great change took place in her physical and mental condition; she became morbidly nervous; she was unable to obtain either sufficient or regular sleep; her appetite was poor, and she grew pale and lost flesh. In a few days after the disappointment, she was treated for a painful dysmenorrhœa by a highly intelligent physician, who, without knowing anything of her 'social and private history,' observed that she was very nervous and excited, and that her expression was wild. This physician treated her for the same affection and general condition at different times in the course of the following nine months, at the end of which time she accompanied her employers, who had removed their business to a town in an adjoining State. Besides the occasional bodily indisposition, and the general impairment of her bodily health, and the depression of spirits which began with the disappointment and sense of great moral injury, she, from time to time, exhibited acts of impulsive violence, such as beating over the head with a dust-brush a female friend to whom she was much attached, to whom she was under many obligations, and with whom she had had no misunderstanding; pursuing

with a carving-knife another female friend, to whom her relations were similar to those just described; attempting, without the least provocation, to destroy a beautiful and costly piece of needlework, and scatter jars of preserves over the carpets; attempting to visit a lake shore at a very early hour of a cold winter morning, accompanied by a remark which indicated an intention to commit suicide. It was difficult to restrain her from these acts of violence, and, in struggling to execute them, she exhibited unnatural strength and energy. She rarely said anything during these paroxysms of excitement and violence.

“In the course of the year which followed the disappointment, and in which the physical and mental phenomena described took place, this girl expressed to various persons her fixed resolve to sue the man who had abandoned her, and, as she believed, sought to ruin her, for breach of promise of marriage—not for the purpose of obtaining indemnity in money for the wrong she had suffered, but in order to vindicate her own character, which, she thought, had suffered from her long and well-known intimacy with him without marriage. In pursuance of this intention, she engaged the services of a respectable lawyer, and of a detective officer, to inform her when the man against whom she proposed to institute the action visited the city in which she resided; and alone, and with slender means, made a journey of over two thousand miles, going and returning, which proved fruitless, in consequence of her being unable to find him. Persisting in her purpose of vindicating her character by instituting a suit against the man who she believed had attempted to ruin it, she a second time set out from her home, and alone, made a journey of over a thousand miles to the town in which he resided, where a writ might be served upon him. On her way, and when within less than two hours’ ride of her destination, she, in consequence of exhaustion and ill health, remained three weeks,

and in that time frequently expressed the single determination to institute the suit for the purpose described, and for that alone. When her strength and health became so far restored that she felt herself able to do it, she made the remainder of the journey, of one and one-half hours by railroad, to the city in which the man in question resided ; visited the building in which he was employed as clerk, learned which his room was, and, approaching the open door near which he sat, and through which he could be readily seen, stood gazing earnestly at him for a few moments, and then retired. Not long afterwards, as he was passing through one of the corridors to leave the building, in the presence of several witnesses of the act, she twice discharged a loaded pistol at him, one of the charges taking effect, and causing his death in the course of a few minutes. At the time of the firing she made no remark ; she did not attempt to escape, but was soon arrested ; and to those who first saw her she did not attempt to palliate the act by alleging the provocation, but expressed, both in words and manner, the deepest sorrow and distress. Her attention could at this time be arrested by direct questions, to which she would return coherent answers ; but she would immediately upon being left to herself become incoherent, and her whole expression and manner were strikingly and impressively expressive of real horror and anguish. On the morning of the day of the homicide she made definite arrangements to return to the city she was about to leave, and there attend a public lecture in the evening with a friend. On the way from the scene of the homicide to the jail, in a condition of great excitement and distress, she told the officer who accompanied her that, in addition to the wrongs already spoken of which had been done her by the man to whom she was so long affianced, he had seduced her and ruined her by taking her to a bad house ; but as this is the only time she is known to have made such

a declaration, and she is known to have often made contrary declarations, both before and after the homicide, and as the latter part of the declaration is shown to be untrue in fact by competent witnesses, it must be inferred that in the excited, distressed, and bewildered state of mind referred to, she expressed what she believed the man to whom she was engaged, and to whom she had so long given her whole confidence and love, had attempted, rather than what he had actually accomplished. This view is corroborated by the testimony of the warden of the jail in which she was confined, who overheard her when she could not have known that any one was within hearing distance of her saying 'Oh, how I loved him (the man she killed.) Why did I do it?'

"The girl whose supposed case we are describing remained in jail about four months after the homicide before her trial under an indictment for murder commenced. During this time she was frequently visited by a gentleman of great intelligence, high character, and considerable observation of physical and mental disease. He observed the symptoms of ill health exhibited by her during the period in question, and made full notes of them. It appears that she had periods or paroxysms of great nervousness, in which her sleep appeared to be irregular and insufficient, if she slept at all, for one or more nights; her pupils were greatly dilated, staring, and insensible to light; her head extremely hot and her hands cold; her insensibility to the draught of cold air through her room very marked, and in which she expressed a determination to do physically impossible things, entertained unfounded apprehensions and positive delusions, and heard false noises and voices. It became necessary for a few moments to restrain her at these times, and during the restraint she exhibited great unnatural strength. And during the period in question she was visited several times by an expert in mental diseases,

who testified that she declined to see him when he called on two occasions, for the reason, as his inquiries led him to believe, that she was suffering from dysmenorrhœa, and was nervous, wakeful, and generally much indisposed; that on another occasion, when he visited her, she was suffering from an attack of erysipelas in the face, and exhibited great nervousness, and expressed apprehensions and delusions similar to those observed by the witness already cited, who visited her during the same period."

On these facts, and on the opinions expressed by Dr. Nichols, Superintendent of the Government Hospital for the Insane, and other physicians called as experts, the jury rendered an unqualified verdict of not guilty.

It would appear that the great mass of those who witnessed the trial anticipated the verdict rendered, and gave it their approval. The jury were not absent from the court-room a sufficient time to admit of consultation, leaving it to be inferred that when the trial was closed they were unanimous in their judgment that the accused should be acquitted. The leading counsel for the defendant expressed his approval and his interest in the cause of his client by an earnestness of manner quite extraordinary and unusual in such cases. And yet, the popular verdict given throughout the country was that the accused had been unjustly acquitted, that the plea of insanity had not been substantiated, that a just verdict would have been *guilty of murder*.

In the formation of each of these diverse opinions, there was, no doubt, an element that even more strongly than usual tended to disturb the action of the judg-

ment. On the one hand, the presence of the defendant, her youth, her beauty, her look of suffering, her quiet and unobtrusive bearing, her sex, tended strongly to awaken and strengthen sympathy and consideration. On the other, those removed from the immediate scene of the trial were led the more strongly, for this very reason, to distrust the soundness of a judgment formed under such an influence. The readiness with which the jury made up their verdict, and the *empressement* with which the accused was congratulated on the event of her acquittal by her senior counsel, may even have caused a revulsion of feeling to the prejudice of the defendant. A still further cause of distrust, depending on a popular belief that the plea of insanity is often improperly set up by cunning advocates to cheat justice of her due, has already been noticed. A still further cause of popular dissatisfaction was the fact that she was unconditionally acquitted, and allowed to go at large. The only defense set up was that of insanity, and it could hardly be realized that a jury would acquit a person indicted for homicide under this defence and not make the verdict special, that is *not insane by reason of insanity*, and recommend that the accused be placed under proper care and restraint in a Hospital for the Insane. This course was incidentally advised by the District Attorney in his opening speech, and the advice was undoubtedly sound. No person when acquitted of a crime on the ground of insanity should be immediately allowed to go at large, but should, unquestionably, be placed under restraint, both for their own good and for the protection

of society. It should be remembered, however, that there are no laws which properly apply to such cases, and that even if the person thus acquitted were sent to an Asylum, there is no law under which he can be held, if his friends see fit to ask for his release.

Both emotion and prejudice then stood in the way of a fair and unbiassed judgment on the merits of the case, and, whoever judged rightly, must have done so in spite of these perturbing causes. Now, with the lapse of time, a more free and unbiassed judgment is possible.

An analysis of the testimony bearing on the question of insanity has already been submitted, and it is believed that a careful consideration of the evidence will be sufficient, with most minds, to raise a doubt regarding the sanity of the accused. Still, in a case so difficult, uniformity of opinion, founded on the evidence alone, could hardly be anticipated even among men well versed in the physiology and pathology of the mind. But there is one point, hitherto unnoticed, that should have great weight in influencing a decision on the question at issue, and that is the *opinions* of the medical witnesses and experts; and here it may not be amiss to say that a broad distinction should be made between the testimony of an expert regarding what he sees or hears and his opinions founded on those observations. Whenever a physician undertakes the treatment of a patient laboring under an ordinary disease, he is not satisfied with any description of symptoms or of the general condition of the patient that even a physician as skillful as himself is able to

give, much less with the testimony of unprofessional observers. As the combined result of study, observation and reflection he has gradually become possessed of a knowledge that is peculiarly his own. He may be able to give a very learned and minute statement of the condition of the patient but yet there is a certain something that he cannot fully impart to another. He has gained a certain power of intuition by which he sees and apprehends a multiplicity of minute differences and distinctions that, perhaps, singly make little impression even on his own mind but which taken in their totality govern his opinion regarding the nature of the case and the treatment to be pursued. The more difficult the subject under consideration the more complicated and involved its relations, the greater the study and abstraction required for its thorough apprehension and the more removed from the ordinary sphere of intelligence, so much the more difficult does it become to fully explain the reasons for an opinion thereon. The investigation of an obscure case of supposed mental disease is, perhaps, more than any other surrounded with difficulties. There is involved a study of the physical being, a study of mental phenomena and of the mysterious relation between the two. The condition of the body acts upon the mind and the mental condition rests upon the body in a never-ending series of action and reactions. As the body is acted upon by external influences and by the mind that inhabits that body, so the mind is acted upon in a two-fold manner; by the physical condition of the body as regards health and disease, the perfect or im-

perfect performance of all its functions and by causes that act directly upon the mind itself, that excite emotions, love, fear, despair. And how slight, how evanescent, how apparently trivial are many of the causes and conditions that affect the mind. If the unseen line that marks the boundary of health and disease in the physical system be so difficult of demarkation, how much more difficult the appreciation of those finer shades that mark the limits of mental health and disease. For this high office there is required a mind adapted by nature and by culture and also by ample experience in the study of mind and in the care of the insane.

It is said of Lavater that he possessed much greater skill in judging of character from a study of the physiognomy of an individual than he was able to impart; that the science he taught was not the science he knew. The assertion is probably correct. To a certain extent every one forms an opinion of the character and intellectual qualities of others from an observation of the features alone; and this opinion is more likely to be correct than otherwise. Many possess this power to a remarkable degree, so that they are rarely deceived in thus judging. And yet, however correct the judgment, and however firm the belief, few can give even the semblance of a reason for their opinion. If questioned they will simply answer, the person looks stupid, intelligent, deceitful or frank, &c. When those even who consider themselves experts in the so-called science of physiognomy, attempt a scientific statement of the reasons for what may be a correct

opinion in a given case, both they and their hearers cannot fail to be conscious that the unexpressed reasons far exceed in importance those they are able to express.

Now, there is a *physiognomy of insanity*. Taken in a broad sense, this term may be made to include all those conditions of state and of mode in the insane, which are immediately cognizable through the medium of the senses. As thus defined, it would include the posture of the body, head and limbs, whether in standing, sitting, or lying; the appearance of the skin, tongue, hair, eyes, ears, and the general expression of the features in a state of rest; the movements of the body taken as a whole; the manner of walking, of moving the limbs, and of protruding the tongue; the degree of mobility of the pupils; the voluntary and involuntary movements of the features; the general expression of the features when animated by the stimulus of mental activity; the condition of the skin as regards temperature, moisture, elasticity and smoothness; the modulation of the voice, the articulation, the manner of speaking, and other points that would attract the attention of an experienced observer. If the general practitioner requires to understand the physiology and pathology of the human system; if it be desirable for all men to possess some power of judging of the character, capacity and intentions of others from the changes and characteristics their mental being imparts to the physical, the expert in the study of mental disease requires in addition to all this, a knowledge of the physiognomy of insanity as

above explained. If a knowledge of the first is difficult of attainment, a knowledge of the latter is still more difficult, as it pre-supposes the former, and also the advantages of a course of study and opportunities for observation possessed by few.

What is true of these crucial cases is no less true in essence of the more obscure. There is still a something, however elusive and however undefinable it may be, that reveals itself to the mind prepared and adapted for its reception. This something, this physiognomy of the disease, it is the peculiar province of the expert to understand and in his power to do this lies an important part of his skill. But this portion of his knowledge can be fully expressed only as his individual *opinion* and for the weight and value of so much of his opinion as is thus founded the sole criterion is the character and ability of the expert.

It is a rule in jurisprudence that it is the province of the jury to decide regarding the credibility, weight and bearing of all facts elicited through the testimony of witnesses. Hence when the opinion of an expert is sought in a given case he is not allowed to give his opinion directly on the facts but a hypothetical case or history is made up by the counsel on the different sides comprising more or less of these facts, according as the advocates suppose them to be pertinent to the case at issue or advantageous to their cause. The expert is then required to give his opinion on these hypothetical cases.

Now the question of fact should undoubtedly be left with the jury, but the method in which it is done

is open to serious objections. In the first place since the hypothetical cases are made up by the counsel on the different sides they will not perfectly correspond. They will differ through omissions, a modified statement of facts and the general coloring given to the narrative by arrangement and style. Sometimes these hypothetical cases differ to such a degree that the same expert finds it necessary to give a diverse opinion on the two.

Again, an expert is often asked to give his opinion on the hypothetical case as thus made up, without any reference to his opinion formed on a personal observation and study of the real case. This element should by no means be disregarded even if his own testimony concerning the facts he has observed be included in the hypothetical cases. The judgment formed from his own observation and study has two factors, the one comprising the facts he is able to state as testimony, the other certain impressions, notions, beliefs, which he gains from the appearance of the subject as presented immediately to his senses and which he cannot thus state as testimony. The first, together with all the facts included in the hypothetical cases, forms a common basis on which he and other experts in the science may equally make up an opinion. The last can form the basis of no opinion but his own and yet this factor is of great importance and ought never to be ignored.

If it were possible and practicable the following method of getting the opinion of an expert would seem to be the best as being the most logical. First, let the facts as given in the testimony be submitted to

the jury for their judgment on the simple question of truthfulness or probability. In forming this judgment the jury would consider the credibility of witnesses, weigh and balance conflicting testimony and form an opinion thereon. These facts might then be considered as part of the real case and submitted to the medical expert as one of the elements of an opinion on the case, the other element being his judgment founded as explained above. But the difficulties in the way of putting this plan in practice would be so great as to render it wholly unavailable.

It would seem, however, that some method which would elicit the opinion of the expert on the whole case might be adopted. For instance, he might be questioned as follows by the court: Taking it for granted that such and such facts (enumerating these given in the evidence), are true, what is your opinion regarding the mental condition of the defendant at the time of the act for which he was indicted, your opinion being founded on these facts and on your judgment formed, from a personal observation of the defendant?

If, in the judgment of the jury, all the facts stated in the hypothetical case were true, an opinion formed on this case would be properly founded; but if, on the contrary, the jury should consider some of the facts given in evidence unworthy of credence, the opinion of an expert, founded on these statements would, of course, be vitiated to that extent, and in order to get his true opinion on the case, as accepted by the jury, the proper corrections would need to be made. Whether such final corrections are found prac-

licable or not, the method above indicated would at least seem preferable to a mode of procedure in which the opinions of experts are asked on hypothetical cases made up by the counsel on the different sides.

The opinion of experts founded on both testimony and observation in a given case, should be final as regards the question of sanity or insanity; not because such an opinion is always and necessarily correct, any more than are the dictates of conscience, but because it is the best guide we have. If, however, different experts should express diverse views on the same case, then it would be the province of the jury to decide between these views, taking into consideration the ability, opportunities for observation, credibility, and disinterestedness of the different experts.

It is to be noted that in this case the medical witnesses expressed the unanimous and unqualified opinion, that the defendant was insane at the time of the alleged murder. It is also to be noted that one, at least, of these witnesses possessed great experience in the study of insanity, and had enjoyed ample opportunities for a personal study and observation of the defendant. These opinions were undoubtedly formed, not on the hypothetical cases alone, but also on personal observations of the accused, which were not and could not be included in the hypothetical cases. Nor can there be a doubt that the jury virtually took into consideration the whole opinion of the medical experts as thus formed, and gave their verdict in accordance with this opinion, and it is difficult to see

how, under these circumstances, a different verdict could have been given.

If the popular verdict was at variance with that given by the jury, it must be remembered that it was rendered without the influence of that restraint which personal responsibility imposes, and also that the opinion was probably made up almost entirely from the evidence, that is from the fifty-six hypothetical cases, without giving due weight to the opinions of the medical experts.

In conclusion, it may be of interest to state that the subsequent history of the defendant fully justifies the correctness of the verdict by which she was acquitted on the ground of insanity, for that was the only plea offered for the defence. Dr. Nichols stated at the recent meeting of the Association of Superintendents of American Institutions for the Insane, held at Philadelphia, that after her acquittal the defendant went to Richmond under an assumed name, and there engaged in her former business, her friends hoping that if she were removed to new scenes where she was entirely unknown, her mental equilibrium would be restored. In this, however, they were disappointed. The physical and mental phenomena urged in the defence as insanity became gradually more marked and more constant until it was found necessary to confine her within the walls of an Asylum for the Insane. She was removed to the Government Asylum at Washington, and placed under the care of Dr. Nichols, where, up to the date of the meeting above mentioned, she still continued to exhibit unquestionable evidences of insanity.

The Dangerous Classes of the Community.

By T. EDWARDS CLARK, M.D., Late Professor of
Chemistry in Williams College.

WE, who live in large cities, think we can make no wrong application of this term. We are kept ever conscious of a restless class of indolent beings, living on the lives of others, contaminating all with whom they come in contact, and dragging the feebler members of the community down to their own level. Their mode of life is their own destruction; and yet they increase through their contagious influence, each convert becomes an emissary of the faith, and many are born by the death of one.

We have most admirable and interesting photographs of these parasites, as well as of their haunts, and schemes of villainy, in the form of ponderous volumes, laboriously compiled by well meaning philanthropists and statesmen. One, who has not paid much attention to the subject, would be surprised, on opening many of these works, to find to what an extent their authors have carried their analytical investigations of this important part of social science. These non-workers, as they are called, are labelled and classified as thieves, beggars, swindlers, prostitutes, and so on, and tables and maps are constructed, which show not only the intensity of criminality as compared with the intensity of ignorance in certain sections of the country, but even, for instance, the committals for abduction in every ten millions of the

male population. In short, some of these works are most thorough digests of the records which are carefully kept at the police head-quarters.

But it cannot be said that social economists have stopped here. However laudable the search for truth for its own sake, may be in other branches of human investigation, no one can be said properly to appreciate his relations to his fellow man, who makes the mere recognition, or discovery of crime the goal of his efforts.

As a consequence of these, shocking developments, hundreds and even thousands of societies, or agencies, for the suppression of vice and crime, have sprung up in the large cities of Europe and America, and have been exerting their influence for many years. Some of these are curative, others preventive, others repressive, and others reformative. And what is the result? In London, where the reformatory efforts are carried on, on what appears a gigantic scale, there being over five hundred and thirty charitable societies, and over three and a half million pounds expended annually for the relief of want, and the prevention of crime, the police statistics inform us, that the number of re-commitments, forms a proportion of something like thirty per cent. on such as have been previously incarcerated, and probably as large a number continue on in crime, experience and sharpened wits enabling them to escape detection. Crime increases, there is an ever flowing stream of want and profligacy, and it becomes more and more evident, that all our charitable efforts at

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prevention or correction are but little more than surface appliances. Here and there one is induced to mend his ways, but it is clear to all, that not much is to be expected from reformative measures. Our only hope lies in extirpating the source, the grand supply of all these evils; and this leads us to inquire whether pickpockets, thieves, burglars and their fellow associates, in reality deserve the title, *par excellence*, of "the dangerous classes?"

Their presence in our midst makes us more or less uncomfortable, and renders personal property, and even life itself, things to be guarded; but are they not the mere refuse, the *debris* of evils which permeate society in all its grades? the natural results of influences, which are kept in force, in a great measure, for the temporary gratification of those to whom they are a danger? Should we not then, rather style them "the dangerous classes," whose whole course in life tends, not only to the production of these very evils, but to the enervation and most certain extermination of the race? And if so, where, especially in our large cities, do the limits of this destructive process end, and where does wisdom rule? The dangerous classes are co-extensive with our society, and cities, were it not for constant accessions from without, would be their own destruction. Here, physical degradation is soon joined by moral corruption, and both go on to the end, hand in hand.

That the mind acts upon the body, is very generally known. The fear of death has blanched the hair in a single night. Cooper and Walshe are of the opin-

ion, that cancer is often due to the same cause, or to other mental affections, and cardiac diseases are, according to Corvisart, at once a cause, and a consequence of fear.

That the condition of the body acts upon the mind, is also known, especially to physicians. Diseases of the lungs, heart, liver or kidneys, are accompanied with exaltation, or depression of spirits. Cold or starvation often induce impulsive acts, which under other circumstances, would be criminal. The mood of a man before dinner is proverbial, and great political changes have often been preceeded by a scarcity of provisions. Injuries to the brain, from shocks, falls, or blows, are not uncommonly followed by one of the appetites or instincts being depraved, so that the character of the person is altered, and he is no longer the man that he was.

But it is nevertheless true that man in the main is not what he is from the reciprocal influence of mind and body upon one another, nor from the superadded and constant action of the circumstances in which he has lived ; for the underlying impulses, which in great part have shaped his character, have come to him as inheritances of parental virtues or vices, either of body or of mind. They are the capital with which he and circumstances have to work, and which in spite of both, must always give color to his every act. We know right well that the instinct of an animal is sometimes positively traceable to the acquired power of former generations, and that those who are interested in the rearing of domestic animals, aware that both

physical and mental peculiarities may be inherited take advantage of this tendency for perpetuating or improving any desirable qualities of their stock.

It is now fully recognized that the human race is subject to the same laws of descent. Not only are peculiarities of bodily form or of physiognomy transmitted from father to son, as among the Jews, the Germans, and the Irish, who are the most familiar examples in this country, but also bodily blemishes, peculiarities of the senses and diseases which may be either constitutional or local in their nature. The decline and total extinction of many royal and aristocratic families, in which it has been obligatory to marry relations, has been clearly due to certain diseases which have been intensified by transmission.

Were it possible to analyse a human mind, we should find it composed of much that has not been acquired through experience but has come down, possibly through a long line of ancestors, undergoing modifications, it may have been for the better or for the worse. Every one observes that certain talents, for instance, run in families. One imaginative, another inventive, another musical, another is characterized by strong reasoning powers, and it is an every day remark that such and such a one comes by this or that from his mother or father.

There is in every one an individuality which we are conscious is not due to training or to circumstances, and which, however these may modify it, cannot be entirely eradicated. The human being starts with mental and physical possibilities or impulses which

are so strong in their nature that it becomes a matter of difficulty to tell, not what we have inherited but what we have not. Originality is kept down by transmitted tendencies, which give color to all our deductions from experience and as it were framed us in the pursuit of knowledge. We do not all see things alike nor does nature awaken in all similar tastes or sympathies.

Our habits and mode of living start impulses which find permanent record in our descendants. That drunkenness, for instance, entails a thirst for stimulants, and children are found following in the footsteps of dissipated parents, are facts which, unfortunately, we are too often forced to recognize in our intercourse with society; but it is to be lamented that it is not generally appreciated that the evil does not stop here. Drunkenness often descends in some other form, and shows itself in crime and vice. The children of an inebriate are not unfrequently the victims of impulses, such as tend to extreme licentiousness, cruelty or even murder, which make them a terror to the community, the restraining faculties either having lost all control or never having been in the ascendancy. The power of acquisitiveness, which has been cultivated for dishonest purposes, on the part of parents, is often transmitted in full force to the children and stealing is now recognized as an hereditary vice. In fact, the pernicious and poisonous parts of human nature seem the most likely to be reproduced, and a man's acquired habits, which may have been his ruin, still work in his descendants with intensified activity. Even the occa-

sional excessive indulgence in an innocent pleasure may entail misery on those that come after us. In some sections of country, where it is the custom of the bridegroom, and sometimes the bride, to become quite intoxicated on the night of their wedding, it is not unfrequently the case, that the first child is idiotic, maniacal, or impulsive, while the others inherit ordinary mental capacities.

The new generation, unfortunately, takes not a fresh start freed from the vices and mistakes of the past, but has to struggle up loaded with the accumulated weight of the transmitted influences often of misspent lives. There is much importance to be attached to family and ancestral respectability, if we properly apply the term, and understand it to mean that the rules of mental and physical health and development have been obtained, at least, as far as fallible human judgment dictated.

Every one is conscious of having been led frequently to commit some impulsive and objectionable act, by the presence of bodily pain or irritation, and has witnessed in others, in whom the powers for good and evil have been too evenly balanced, the breaking forth of tendencies, long held in check by the better principles, through the influence of external temptations which may have suddenly increased. Moreover, these pernicious tendencies may not have been yielded to, simply through the multiplying of evil influences, but the moral sense may have been gradually weakened by disease. Thus the faculty of acquisitiveness may in this way be exaggerated and become the dominant

idea, so that one may be possessed with a tendency to lay his hands on everything within his reach. In high life we now and then recognize instances of this kind, attributable to mental disease, but among the lower classes the failing is seldom traced to this source.

In every community there are many who have to contend constantly with similar evil propensities and in whom a continual war is kept up between the powers of reason and the influences of an inherited or acquired diseased organization. The lamentable instances of sudden and confirmed drunkenness and debauchery which occur not unfrequently, seemingly under the best influences, show how slight has been the controlling power. For others, who have stood up under prosperity, the misfortunes and vicissitudes of life prove too much, and latent evils, and terrible impulses break forth with all the force of pent up waters. Education and religion may and do accomplish much towards holding in check such instances of moral disease, but experience teaches us that religious convictions themselves have a very insecure footing in such minds unless strongly aided by favorable circumstances. When the moral sense is lessened absolutely or relatively, what we are accustomed to call our weaker powers, become the stronger.

But the prevailing sentiment still holds among most well informed, and we may add, charitable people, that, as Barlow expresses it, "Man has in his own nature the antagonistic power, which, if properly used, can set at naught the evils—aye, and the so-called irresistible propensities too—of the bodily organism. So nicely

balanced indeed is the machine, that a grain can turn it to either side, but it is in the power of the will to cast that grain." According to this commonly entertained view, the will is held to be a something independent of the mind or bodily organism, self-determined, without cause, and acting as a sort of controlling spirit, in short, an actual impossibility. But if we reflect, we shall see, that like every thing else in nature, it is in itself, but an effect, a result of a preceding cause.

Why do two individuals in the one and the same case will differently? Why are we very often able to decide, how, not only children, but even persons of mature judgment, will act under certain circumstances? It is because there lie back of the will, conditions as various as there are individuals, according to which, we from experience, find that all act. In one and the same individual too, the power of will varies according to the circumstances, according, for instance, as he may be laboring under the influence of passion, stimulants, joyous feelings, or disease. It is commonly conceded that these pervert the judgment, and yet, will any one when acting under the above influences admit that he is not acting according to his own free will?

What then is the will? It is clearly a power which precedes the act, and is not, as Hartley asserts, "the desire or aversion," but stands between these and the act. It is, more comprehensively speaking, the power which enables the judgment, or mental deliberations to find expression, and acts as the servant of the

mind, though it is in a sense true, as Spinoza has said that, "the will and the intelligence are the same thing;" for at the moment, the former fairly represents the latter. The will then evidently depends upon the nature of the individual, as inherited and acted on by the influences of experience, or in other words, on antecedent causes or conditions.

Such being the natural connections of the will, the prevalent doctrine of free-will must be greatly modified. The will cannot control the mental conditions of organization, but is dependent on them. Our ideas come and go, and we cannot by an act of the will, free ourselves from certain thoughts. Other thoughts may displace them, but not through the will; but by a certain ill understood power of association. It cannot compare, deliberate or decide; but only serve. Our desire to escape from temptation, and place ourselves under more healthy conditions of body and mind, is not an evidence of absolute freedom of will; but rather, that our mental condition is still such that we perceive that the move is for our advantage.

It is a cheering sign of the times that these views are beginning to find advocates, and that Psychology is being treated as a division of Natural History. There is an already admitted physiology of the mind, mental peculiarities are being traced to conditions of the bodily organism, and voluntary as well as involuntary acts are seen to be due to physiological causes. We see that a man of strong and desirable character is one who has a good education, engrafted as it were on a well organized constitution, and his will, could it

be fully understood, would always be found to represent this combination, or to be a natural resultant of it. You might trace it back through desire, deliberation, ideas, and feelings, to an inherited condition of organism, developed by a life experience.

If it is true that the child is in a great measure but a fac-simile of the life of the parent, and the will is so closely connected with the mental qualities, is it not clear that in our large cities the really dangerous classes are those who themselves stand in fear? The prevalent mode of life here is one of intense excitement; the over taxed mind and body are sustained by stimulants, and the appetites and passions are gratified at the expense of bodily vigor. There is great intellectual culture to the neglect of physical training, and the descendants of the influential are very often men of very moderate calibre. In fact, civilization here tends, not only to insanity, vice and crime, but to the destruction of the race; and were New York city, for instance, cut off from all accessions from without, and the present habits and mode of life continued, there would very soon begin an actual decrease of the population. Man is not exempt from the influences which control the development of the lower animals, and science teaches us that, as many of these have become entirely extinct from changes, and in a sense unnatural circumstances and habits, so the same thing may happen to the human race. With us the "great town system" is extending rapidly into the country, and there is already a marked diminution in the physical vigor of our yeomanry.

We are not of the opinion that of necessity civilization tends to the destruction of the race, but that it does so at present, is simply because the true connection between mind and body and of these to the influences of nature, is not generally appreciated. The highest development of the intellectual faculties cannot be incompatible with the fullest and most healthy development of the bodily organism, on which these depend for their manifestation; for some of the most powerful thinkers have been men of corresponding physical vigor.

The question of the extent of individual responsibility we have thought it not necessary to enter upon for the elucidation of this subject. The truthfulness of the above views may be admitted without a settlement of this much controverted point.

INCORRECT.—The accounts which went the rounds of the newspapers sometime since, that a patient with hydrophobia, somewhere in Michigan, had been suffocated by the attending physicians; and that another in Illinois, laboring under the same disease, had been cured by bromide of potassium, are both positively contradicted.

SELECTIONS AND TRANSLATIONS.

Suicidal Monomania.

(Translated from Du Vivier's Work on Melancholy, for the Quarterly Journal of Psychological Medicine and Medical Jurisprudence. By E. S. DUNSTER, M.D.)

SUICIDE is not an act of madness. It is an act of extreme egoism. To accomplish it, it is necessary for a moment to forget both God and the world; to fix the attention on one's self alone; and to carry to an extreme degree that natural selfishness which is implanted in the bosom of all. If we judge of theories by acts, let us, then, submit this one to an examination.

What is a yesterday, a to-day, or a to-morrow? Madmen have no perception of time. They do not see that they grow old. They have no idea of a beginning or an end. Alas! they are unable even to hope for death. To compass the idea of suicide there must be a certain degree of intelligence and a certain working up of the passions. Hence it is, there are more suicides among civilized peoples than among barbarians.

The most unfortunate man in the world, the most destitute and poverty-stricken will never dream of taking his own life unless he has acquired some degree of education, or, unless he has pursued some bubble like fortune, glory, love, or poesy—syrens which have lost none of their charms since the golden ages. Suicide is not a disease of the simple-hearted or simple-minded; and if, in our day, the working

people are anyway given to it, this only shows that their intelligence has been enlarged by modern civilization. If suicide were the result of mental alienation it would never be determined by those imperious and, in some degree, plausible motives, some instances of which we shall have occasion to narrate. It would not show the singular variations in number, and prevalence which we observe at certain periods, nor should we recognize so closely the influence that religious creeds, as well as political events and social revolutions exert, in a greater or lesser degree, on the frequency of these cases. For the most part suicides show the tendency of the age in which they occur. When the Grecian republics were flourishing we saw very few suicides; still, by a certain sort of rigorous necessity, there were some. Stoics committed suicide that they might rest free and independent; Epicureans because they found in the world few pleasures and many sorrows.

Montesquieu, in the following passage, shows us, in respect to this matter, that the Romans, when they had reached the most profound degree of moral degradation, had, at the same time, touched their highest point of material power and grandeur. We can give, says he, many reasons for this so general custom of suicide among the Romans: the increase of stoicism which was there encouraged; the establishment of triumphs on the one hand and slavery on the other, which caused many a noble man to think he could never survive a defeat; the advantage which was offered to the accused of meeting death by his own hand sooner

than submit to a judgment by which his memory might be accursed or his property confiscated; a species of honor more reasonable, perhaps, than that which leads us, in our day, to kill our friend for a gesture or a word; finally a glorious opportunity for heroism, each one finishing the rôle which he was playing in the world at any point he might choose.

We may add that there was a great facility in the means of causing self-death; the soul wholly intent upon the deed which it was about to commit, the motive which influenced it, and the perils it was about to avoid, did not see death clearly; for passion allows one to feel but not perceive.

Self-love, the love of our preservation changes us in so many ways, and operates by principles so conflicting that it causes us to sacrifice our being from the very love of our being, and such is the case when we bring ourselves to consent to give up our lives from a natural and yet illy defined interest which makes us love ourselves more than our lives.¹

It is just here that the sophism lies hidden. If it were thus, all the notions which we have of the nature of our being would be upturned from the very foundation; for if the will kills the body, who shall kill the will? In admitting that the idea in the mind of the most of those who commit the crime of taking their own lives, is, that they wish to be completely annihilated, a Christian does not hesitate to reply that this is only an illusion of their wicked spirits which

¹ Montesquieu, *Grandeur et Décadence des Romains*.

impels them to confound the cessation of this miserable life with the annihilation of all life, and which is thoroughly contradicted by the sentiment which impels them to seek, in this issue, exemption and repose. This last view has considerable weight, in as much as all the defenders of the Christian faith have alleged it—without even excepting St. Augustine.

Thus everything in the complex phenomena of suicide, even to the feeling of him who, in committing the act, thinks that he annihilates himself, strengthens the belief in the immortality of the soul. Ought we not, then, to conclude, at once, that so universal a notion is necessarily natural, and therefore true?

Let us, at length, descend from the domain of ideas to that of facts, and in order to establish the truth, let us prove that, in modern times, this belief has found no contradiction in any part of the globe.

The mania for suicide happens, occasionally, to be encouraged, in some degree, by the prevailing manners and opinions. Suicide is unknown in hot climates, if the people who dwell there are fatalists; it is frequent in the same climate if the inhabitants believe in the doctrine of mystic renunciation. Each man being the worker out of his own destiny, and receiving, after this life, the reward for the good or bad deeds done here, suicide ought to be considered a revolt against Providence, or an audacious denial of the justice of God, and is no less to be reprobated than murder or parricide.

At no period do we see so small a number of suicides as in the middle ages. These were the centuries of earnest creeds, powerful convictions, and brilliant

aspirations. The unknown man, despised, down-trodden and doomed to ignorance, regarded himself, nevertheless, as accountable before God and his fellow-beings for the least drop of his blood ; this he hoped to turn to good account for the glories of the future and the battling for those rights which could only be obtained at the cost of cruel wars and overwhelming ruin. The cloister, moreover, was a refuge for despair, and one which preserved many an unfortunate from death.

But the belief of our fathers could not always remain stationary. Time must weaken it in proportion as they departed from its principles. To lukewarmness succeeded doubt ; then came unbelief, and finally indifference, the very worst moral state into which man could fall. At length there appeared some spirits who, impatient of every restraint, were no more inclined to submit themselves to the universal law of misery and of labor than to the civil and religious laws of their country. Digging up from the dust the ancient Grecian and Roman doctrines, they applauded anew suicide both by their writings and their example. Some also, as viz., Jean Robeck,¹ Thomas More,² Jean du Verger de Hauran,³ the Abbé of St. Cyran, Samuel Puffendorf,⁴ Barbeyrac⁵ and others, published treatises

¹ *Exercitatio philosophica de Morte voluntaria Philosophorum et bonorum Virorum, etc.*

² *Utopia.*

³ *Question royale.*

⁴ *Le Droit de la nature et des gens.*

⁵ *Traité de la morale des Pères.*

with the view of showing that the fathers of the church taught a moral lesson in voluntary death.

Is it not painful to think that the mania for suicide was revived and extended at the very time when the human mind was breaking its fetters, when science was realizing its most brilliant achievements, and society was establishing itself on new principles?

The problem of pointing out the influence of political events on the normal state of the people, would be a very important one to solve. As changes in the moral condition of the individual always bring about physical alteration, analogy leads us to think that political convulsions ought to produce changes in the physical condition of nations. However that may be, it is certain not only that suicides have increased during the last two centuries, but also that year by year they continue to follow an ascending scale, and the records of the courts of crime show this progressive increase. Thus, in Paris alone, from 1794 to 1804 there was an average of 102 suicides yearly, while from 1814 to 1823, we reckon them at 334, and from 1830 to 1835 this figure runs up to 362;¹ in 1863 it was about 460, and counting in the suburbs, there were 550.

It appears from the researches of M. Lélut (Report on Solitary Confinement at Mazas, 1852) that we find in France one suicide to every 10,447 inhabitants. But if we consider that out of the whole number the women comprise scarcely a quarter part, and that it is equally just to deduct the children under 12 or 15 years of age, we see that there is not less than one suicide to

¹ *Annales d'hygiène publique*. V. xvi, p. 223.

every 5,000 of the adult male population. "From any point in France that you may start from," says M. Guerry, "the suicides increase proportionately as you go towards the capital (Paris). Thus, while in the department of the Seine the proportion is one to 2,865 inhabitants, in the Seine-et-Oise it is one to 4,984; in l'Oise it is one to 5,547; in Seine-et-Marne it is one to 5,596; in Marne one to 6,071; this ratio in Lozère is not more than one to 42,156; in Hautes-Pyrénées, one to 51,283; in Haute-Loire one to 57,955; in l'Ariège one to 90,178; and finally in Aveyron, one to 92,648."

We must conclude from the preceding observations that Paris exercises some sort of deadly influence upon those who dwell there and in the vicinity; furthermore, we recognize as a general law in the whole of Europe, that suicides are more numerous in urban than in rural populations. This pernicious influence is equally manifest in the case of the other great capitals; thus it has been remarked of London, Hamburg, Copenhagen, Brussels, Geneva, &c. Dr. Barrous asserts¹ that suicides were more frequent in Paris than in London in the proportion of 5 to 2, but all the English writers have maintained the contrary.

We should find a still smaller number of suicides in the rural districts were it not for the habits of drunkenness in which certain classes indulge. Roesh² claims that suicide has become so frequent in England

¹ Quarterly Review, 1821.

² Annales d'hygiène publique. Paris, 1838.

only since the extension of the vice of drunkenness toward the middle of the 16th century; this degrading vice exercises no less disastrous results in the United States and in the northern countries of Europe. As willingly, also, do we yield assent to the doctrine that suicides at certain periods are explained by the derangement of established ideas and prevailing beliefs under the influence of social reforms or public calamities which unsettle fortunes and social conditions; for all these things have their part in this education, this well-being, this development of all the faculties which we dignify with the name of civilization. But would it not be the most fundamental of errors to admit the truth of this reflection of the profound Montesquieu: "It is certain that men are less free, less courageous, less devoted to noble enterprises than they were formerly—by reason of this very power which one possesses in himself of escaping at any moment from every other power."

As for ourselves, (who do not approve of this precept which Voltaire has substituted for morality, "religion has no interest except for the priests and the aged haughty prudes") let us oppose to this estimate of the philosophic school of the last century the Christian teaching which, resting upon the principles of moral and religious equality, softens down under the veil of charity whatever is offensive and inhuman in the natural or acquired inequalities of men, and transforms men of power, of science, and of wealth, into benevolent guardians of the lower classes.

Montesquieu was then able to sustain the fate of all

the noble and brave spirits who have the misfortune to embody all truths under the standard of the most fundamental of errors.

Let us briefly explain these different effects.

Montesquieu, in remarking that suicides are more common in England than anywhere else, attributes this disease to the influence of the climate. How is it that this has not been noticed of Holland whose climatic conditions are at least as disadvantageous? M. Dubois d'Amiens has pointed out the error of this opinion and shows that the suicidal mania of our neighbors across the channel has its origin in entirely different conditions.

There is in English literature a very singular taste which I would desire to call the *taste for death*. Whatever there is of the profound and mysterious in the idea of death, whatever is vague in the terrors which surround it, or horrible and repulsive in the features which characterize it, all this seems to have an enchantment for the English genius. It is curious to study this taste for death in the works of Shakspeare; but it is to the peculiar mind of the North that is due this taste for sorrow which has its school in his country.

Unquestionably Shakspeare is a philosopher, if we mean to say by this that he knew the human heart and had analyzed its most secret movements. But he is not a theorist constantly intent upon showing off principles which he carries out to philosophical conclusions. Thus it is, that Shakspeare assumes different characters according to the point of view of his critics, and ceasing to be himself, resembles the one who

A terrible question, it is true, but one which the Christian does not ask himself. In thus speculating on the future, Shakspeare has boldly put upon the stage the spirit of doubt and scepticism, and it is by reason of this that Hamlet is the prototype of the heroes of Lord Byron; they are born from him. The gloomy and audacious irony of Manfred has its origin in the soliloquy of Hamlet.

Shakspeare has drawn from the Christian church his meditations upon death, but he has placed an entirely different construction upon them. If he had shown in Romeo how love could inspire, so as to produce in us more vivid emotions, he had not then depicted the affright of a man who, just on the point of taking his own life, is brought to a stand-still by the uncertainty regarding what is beyond the grave.

The imitation of the English and German literature has, in our day, brought about the result that death has come to be of the commonplaces of poetry. In former times we came into contact with death, only in the church, and there we found it stern, unforbidding and full of serious instructions; now, we meet with it everywhere in literature, but we find it described as bewitching, set off with adornments, and making a continued effort to draw an imposing contrast and to astonish the imagination; sometimes its terrors are exaggerated in order to increase one's emotion by fear; sometimes it is represented with smiling visage and crowned with roses, in order the better to allure to it the unfortunates who are disgusted with life.

It is not good for man to give full play to all his imaginings. The peculiar sentiments and strange thoughts which emanate from the spirit, at first glance, please us, for they make us believe that we have hit upon something entirely original, a charming thing which excites everyone's ambition, especially in times and countries where equality reigns.

But this petty deceit is not without danger. We commence by wishing to deceive others and oftentimes end by deceiving ourselves. We involuntarily acquire the enthusiasm which we would only mimic, and lose our senses in having wished, like Hamlet, merely to toy with madness.

The preponderance of thought and of words over action, or, in a word, weakness is the foundation of the character of Hamlet as Shakspeare has conceived it. It is also at the bottom of the character of the heroes of suicide. Lay aside in fact, all those grandiloquent sentiments which they parade, and penetrate into their unquiet spirits and you will find weakness and indecision at the bottom of all this ; they love excitement rather than action, and to such a degree, that, to escape from the toils of action, they some day take refuge in eternal repose.

The Germans seriously compare Hamlet and Werther. They have many characteristics in common. Both have the same refined and sickly sensibility, the same sadness, the same haughty spirit, the same philosophical train of thought ; with an equal bitterness do they judge of the world in which they are doomed to live ; the degrading passions of man they alike shrink from ;

their eyes are bathed in tears at the recital of a virtuous deed, their souls overflow with a generous enthusiasm at the good and the true. But they live too much wrapped up in themselves, they dive too deeply into their own thoughts, they carry to too great a degree the power of analysis and of observation—to play on earth the part that conduces to human activity. Bring these refined spirits, more sensitive than determined, into a struggle with some difficult task and they are not able to battle with it. They will yield to circumstances; they are not made for manful conflict, but for solitary meditation. What, then, is this death-bringing insect which, according to Goethe, embittered the young existence of Werther? Let us not be thereby deceived; the literature of our century has, in a great measure, fallen heir to the religious scepticism of the last century.

Most of the poets of our day have brought out the deformed and disagreeable aspect of things, they have looked at the evil and have painted man in his sorrow and his error. Strike out certain great moral disorders, the scepticism and the most revolting social iniquities and you will exhaust the sources from whence the most influential writers of the eighteenth and nineteenth centuries draw their materials. Ah well, there is in each of these centuries of literatures, where the prominence is given to evil and sorrow, a great moral revolution. The one tends to nothing new, the other to life. One makes light of its passions and its doubts, the other endures them and regrets. One follows the course of vice, the other that

ideal which raises the human soul above the earth, and directing its flight, keeps it from becoming lost in the region of reverie and abstraction. Here we will remark, that if Werther has aroused, in most spirits, the sickly sensibility and thought of suicide, from Rene and Manfred also originate all that class of dreamers who, believing that they have lost their present joys and all hopes of the future, resist only feebly the attacks of misfortune and do nothing but blame their cruel destiny. There are two kinds of reveries, one weak, the other vigorous, and the one leads in a vague manner the poor souls who have the desire of thinking without the ability to find solid and complete form for their thoughts; the other is a prelude to noble creations of intellect and gives force, power and health. In so far as it is true that there is no passion which cannot be overcome, no talent that cannot be acquired, no obstacle that cannot be surmounted and no pain, thanks to a determined will disciplined by education, strengthened by exercise, and sustained by good habits, that cannot be endured.

The heavenly paradise is attainable since Christ, but not the earthly paradise. And so God has sent us here to work and not to dream. To all our pains, to every thought, to piety, culture, love, the care of one's family, the love of the beautiful, and to the arts He has coupled work as a necessity. In no manner is God satisfied with mere thought, for this quickly ends in empty reverie. This divine law ennobles all professions, soothes the fatigue of labor and relieves the ennui of our condition.

In this pilgrimage of life, which is full of sorrow and hard to endure, only those go through to the end, who go because God has so willed it. Those who go only so far as the route pleases them, run the risk of experiencing only a brief career. Without work life indeed is sorrowful; vice entwines itself around the heart and satiety and ennui secure possession of the soul.

**On Dreaming: Considered Especially in
Relation to Insanity.**

By THOMAS MORE MADDEN, M. R. I. A., &c.

THE subject of the following communication is a branch of medical psychology, which many years ago was discussed before the former Medical Association of this college in a paper by Mr. Andrew Carmichael, read before the Association on the 6th of April, 1818, by Dr. Brooke, and printed in the Transactions for that year. As, however, I purpose to treat the subject from a different point of view to that adopted by Mr. Carmichael in his "Essay on Dreaming, including Conjectures on the proximate Cause of Sleep," above referred to, I mention this fact merely to show that the question of dreaming, considered especially in relation to the study of insanity, seems to be a matter not unworthy of the attention of this Society also, which now represents the former Association of the members of the College of Physicians.

In considering the nature and causes of insanity I was often struck by the close resemblance which

appears to exist between the state of the mind in insanity, and in the dreaming condition. And I have now attempted to digest the notes I made on this subject during some years into regular form, in the hope of being able to contribute something to what is known concerning a very obscure branch of mental science, and one which may possibly throw some light on the nature of the morbid action in the mind which constitutes insanity.

By the majority of scientific writers, dreaming has been considered from a purely metaphysical point of view, and perhaps on that account has received less attention than it deserves from physiological and pathological inquirers, who too often seem to ignore the truth, well expressed by Reid, that—"Medical cannot be separated from moral science without essential mutilation." I know hardly any work in the English language that treats of this question in a full and satisfactory manner.

The best account of the physiology of dreaming which I am acquainted with is this fact contained in Sir Henry Holland's "Chapters of Mental Physiology," which, interesting and suggestive as it is, yet leaves some parts of the inquiry altogether untouched, and hardly even alludes to the diagnostic and prognostic value of the signs furnished by this condition of the mind.

I therefore hope that I may claim the indulgent consideration of the Medical Society for the following attempt to elucidate the question of dreaming as one of the most interesting problems connected with men-

tal physiology. And I believe that I shall be able to show that this condition of the mind affords indications which, if rightly interpreted, are calculated to throw light on the diagnosis and prognosis of some of the most obscure diseases which affect mind and body.

I. VARIOUS THEORIES OF DREAMING, ANCIENT AND MODERN.

What a dream really is? and how and why we dream? are the questions which have been investigated by some of the greatest philosophers of every age, but which, nevertheless, still remain unsolved. Before laying my own views on these questions before the Medical Society, I shall first briefly allude to some of the most remarkable theories on the subject; as even in the wildest speculations on philosophical questions we may occasionally discover some vestige of truth, or at least, we may learn to avoid the errors of our predecessors.

In Homer we find the idea that—"Dreams descend from Jove."¹ Herodotus makes Artabanus tell Xerxes that "Dreams in general originate from those incidents which have most occupied the thoughts during the day."² Epicurus, we are told, taught that dreams were occasioned by "images," which were supposed to emanate from all material bodies, and that being of extreme tenuity these images penetrated into the mind, although the senses were closed

¹ Homer, *Iliad*, Book, i, line 86.

² Herodotus, *Polymnia*, chap. xvi.

during sleep, and excited in the sensorium a perception, or dream, of the object from which they proceeded. This absurd idea was subsequently adopted, and amplified by Lucretius.

In the "Treatise on Dreams," commonly attributed to Hippocrates, which, although its authenticity is disputed by the late Dr. Adams, is of unquestionable antiquity, being quoted by Galen, we find an exposition of the opinion of the early Greek physicians on the subject: "When the body is at rest the soul being then in a state of movement steals over the organs of the body, manages its own abode, and itself performs all the actions of the body; for the body being asleep does not perceive, but the soul being awake beholds what is visible, hears what is audible, walks, touches, is grieved, reflects, and in a word, whatever the offices of the soul and body are, all these the soul performs in sleep. Whoever then knows how to judge of all these correctly will find it a great part of wisdom."¹

Most of the early medical writers allude to the species of dreams to which Hippocrates refers in the passage I have just cited, and which they imagined often revealed the remedy for whatever disease the dreamer suffered from.

Galen tells us that *Æsculapius* was supposed to assist the sick in dreams, and that in them he pointed out the proper remedy for whatever disease the patient

¹ See Dr. Adams' *Disquisition on the Authenticity of the Different Treatises attributed to Hippocrates*, prefixed to *Sydenham Society Edition of Hippocrates*, vol. i, p. 82.

might suffer from.¹ When Galen himself was suffering from inflammation of the diaphragm, we read that he was instructed in a dream to open a certain vein, which he did, and recovered. Also the physician, Abin Zoar, acquired in the same way a knowledge of the medicine, by the use of which he was cured of a severe ophthalmia. But it was among the Greeks that this idea was fully developed and formed into a regular system.

In the first volume of Sprengel's great work on the "History of Medicine," is a most interesting account of the manner in which the Greeks prepared themselves before sleeping in the temples of Æsculapius, and of the dreams with which they were visited in these places.²

Speaking of the uses of dreams, Jamblicus says: "And bodies, indeed, that are diseased it heals; but properly disposes such things as subsist amongst men erroneously and disorderly. It likewise frequently delivers the discoveries of arts, the distribution of justice, and the establishment of legal institutions. Thus, in the temple of Æsculapius, diseases are healed through divine dreams; and through the order of nocturnal appearances, the medical art is obtained from secret dreams."³ Herodian tells us that Antonius being ill, "hastened to Pergamus, in Asia, with

¹ Galen, *De Sanit. Tuend.* Lib. i, cap. 8.

² Sprengel, *Histoire de la Médecine*, Traduite de l'Allemand par M. Jourdan, tome premier. pp. 160, 161. Paris: 1815.

³ Jamblicus, *On the Mysteries*. Section iii, chap. 3, page 120. Translated by Taylor. Cheswick: 1821.

intent to apply to Æsculapius for the recovery of his health, and there amused himself with dreams."¹ Aristophanes gives a detailed account of the rites used to invoke a dream in the temple of Æsculapius in his comedy of *Pluto*, or *Wealth* (Act iii, Scene 2d.) But if, notwithstanding these rites and preparations, the patient did not dream of any remedy, we are told by Artemidorus,² that whatever the patient happened to dream about was considered as allegorical of the remedy. Though, as Sir Thomas Brown well observed: "A man might have been hard put to it, to interpret the language of Æsculapius, when, to a consumptive person, he held forth his fingers; implying, thereby, that his cure lay in dates, from the homonymy of the Greek, which signifies dates and fingers."³ Being thus vague, these dreams were interpreted by the guardians of the temples, who appear to have generally been shrewd and observant physicians. Plato's theory on this subject was, that dreams are caused by demons or spirits, which he imagined filled the earth and air; and that some of these spirits being of good, and others of evil natures, gave rise to corresponding dreams."⁴ Wild and fanciful idea as this is, it is not a little strange to see it advocated by a very sober Scotch philosopher of the 17th century, with some slight modification. "Our dreams," says Mr. Baxter,

¹ Herodian's *History of his own Times*. Translated by Hart, p. 181. London: 1749.

² Artemidorus, *Oneirocritica*. Lib. iv, cap. 24, p. 215.

³ Sir Thomas Brown, *On Dreams*. Works vol. iv, p. 357.

⁴ Plato's *Republic*. Book vii.

"are promoted by separate immaterial beings." And again, he argues that "these beings lie in wait for, and catch the opportunity of the body, to represent, at the same time, something frightful to the mind."¹

More rational than the last quoted speculation was Aristotle's opinion, which, in reality, differs very little from that supported by some modern metaphysicians. He says that every visible object makes an impression on the mind, but that this impression may remain in a latent condition, until it be called into active existence, during sleep, by motions in the brain, commenced before slumber has occurred, but continuing to operate in sleep, and giving rise to a dream, which is a *phantasma* or appearance of a thing, after the object itself is removed.

In the "Dæmonalogia" of Don Francesco Torreblanco, published in the early part of the 17th century, the opinions then prevalent on this subject are thus stated: "The visions or dreams which occur in sleep are either to be ascribed to God, nature, or the devil. Those which are from God are distinguishable from those which are to be attributed to the devil, as we are told by Gregory the Great—"Holy men discern between illusions and revelations, and distinguish the sounds emitted, and images perceived in those visions when cast into deep sleep, so as to know those which emanate from a good spirit, and those which they suffer from (contrary) illusions."²

¹ Baxter's Inquiry into the Nature of the Human Soul, pp. 215, 257.

² Torreblanco, cited in Dr. R. R. Madden's Phantasmata; or, Illusions and Fanaticisms. Vol. i, p. 104. London: 1857.

There have been many theories as to the moral significance of dreams, which at very remote periods of time have expressed a very similar idea, as may be seen by the following instances: "Zeno was of opinion that we might judge of our advancement in virtue from our conduct in dreams; and that, if in sleep, we discover that our minds are prone to yield to our passions, it is a clear indication that we have great need to watch over ourselves."¹ Sir Thomas Brown says the same thing in other words: "However dreams may be fallacious concerning outward events, yet they may be truly significant at home; and whereby we may more sensibly understand ourselves. Men act in sleep with some conformity unto their awakened senses; and consolations or discouragements may be drawn from dreams which intimately tell us ourselves."

Persons of radical integrity will not easily be perverted in their dreams, nor noble minds do pitiful things in sleep."² The last opinion I shall quote on this point is that of probably the most philosophical medical writer of the 19th century, the late Sir Benjamin Brodie, who says: "Dreams are, at any rate, an exercise of the imagination, and one effect of them may be to increase the activity of that important faculty during our waking hours. As they are influenced by our prevailing inclinations, so they may help us to form a right estimate of our own characters;

¹ Plutarch, in *Life of Zeno*.

² Sir Thomas Brown, *On Dreams*. Works vol. iv, p. 357. Edition of 1835.

and assuredly it would be presumptuous to say that they may not answer some still further purpose in the economy of percipient and thinking beings."¹

I shall conclude this brief notice of the various theories of dreaming by citing an English philosopher of the 17th century, a German metaphysical writer of the present day, and a French author, whose work on this subject has been approved of the Institute of France. All these convey the same theory in different forms. The first—Thomas Hobbs, of Malmesbury, says: "Dreams are the imagination of them that sleep. . . . There is a reciprocation of motion from the brain to the vital parts, and back from the vital parts to the brain: whereby not only imagination begetteth motion in these parts, but also motion in those parts begetteth imagination like to that by which it was begotten."² Baron von Feuchtersleben, an eminent German psychologist, asserts that "dreaming is nothing more than the occupation of the mind in sleep with the pictorial world of fancy."³ Monsieur Lemoine, in his interesting work, "*Du Sommeil*," thus defines a dream;—"Un rêve," he says, "properment dit, réduit à sa simplicité élémentaire, à sa pureté parfait, c'est une sensation, c'est une vision, c'est une image excitée, tout à coup dans l'âme par un mouve-

¹ Sir Benjamin Brodie, *Psychological Inquiries, &c.* Part first, p. 158. Fourth Edition. London: 1852.

² The English Works of Thomas Hobbs (of Malmesbury). Edited by Sir W. Molesworth. Tripos, vol. iv, p. 10. London: 1840.

³ The Principles of Medical Psychology. By Baron Von Feuchtersleben Sydenham; 8vo., translation, p. 163. London: 1843.

ment intestine de l'organe et qui s'évanouit avec sa cause organique."¹

II. THE NORMAL STATE OF THE MIND DURING SLEEP.

The question we have first to consider is, whether the mind during sleep is always occupied by dreams or not? And if not, when, and under what circumstances do dreams occur? Most metaphysical writers on this subject incline to Locke's opinion, that we do not dream always when asleep, for we do not think always, and he argues that we "cannot think at any time, waking or sleeping, without being sensible of it." Therefore, Locke concludes, that "most men pass a great part of their sleep without dreaming."² Reid and Macnish are of a similar opinion. A much higher authority on all physiological questions than any of those I have just named, Dr. Carpenter, holds the same views on this subject³ and Lord Brougham in his "Discourse on Natural Theology," expresses his belief that we dream only in the intermediate condition between sleeping and waking. The experience, however, of the great majority of observers confirms the opposite opinion—namely, that we seldom, if ever, sleep without dreaming, although in many cases we have no recollection whatever of having dreamt.

¹ Dr. A. Lemoine, *Du Sommeil au Point de vue Physiologique et Psychologique*. Ouvrage couronné par l'Institut de France, p. 155, Paris: 1855.

² *An Essay concerning the Human Understanding*. Book ii, Chap. 1, Sect. 10, 19.

³ Dr. Carpenter. Article, Sleep. *Cyclopedia of Anatomy and Physiology*, vol. iv, pp. 6, 90. London: 1852.

Baron Von Feuchtersleben holds that, "we, in fact, never sleep without dreaming."¹ German metaphysicians, as for example, Kant and Von Schlegel,² generally incline to the same opinion; and the highest authorities in this country on mental science believe dreaming to be the normal state of the mind during sleep. The late Sir Benjamin Brodie, says: "I should myself be inclined to doubt whether we ever sleep without some degree of dreaming. At any rate, not to dream seems to be not the rule, but the exception to the rule."³ Sir Henry Holland, too, argues that sleep without dreams does not exist; "for," he says, "otherwise there would be two states of sleep more remote from each other than we can conceive any two conditions of the same living being—one in which sensations, thoughts, and emotions are present in activity and unceasing change, another in which there is the absence or nullity of every function of mind—annihilation, in fact, for the time, of everything that is not organic life."⁴ I shall only quote one other authority which, however, appears to me to decide the question. Sir William Hamilton made a series of experiments on himself with regard to this point by causing himself to be aroused from sleep at certain fixed intervals, and when thus suddenly awakened from sleep always found that he was either

¹ Von Feuchtersleben's *Medical Psychology*. Translated by Lloyd and Babington. Pp. 164-165. London: 1847.

² Von Schlegel's *Philosophy of Life*. Translated by the Rev. Mr. Morrison, Pp. 28. London: 1847.

³ Sir B. Brodie, *Psychological Inquiries*. Vol. 1, p. 151. London: 1862.

⁴ Sir H. Holland's *Chapters on Mental Physiology*. London: 1852.

interrupted in the course of some dream, which he remembered, more or less perfectly, or else felt aware, at least, that he was not aroused from an unconscious state."¹

Indeed, it must, I think, appear most probable that as long as vitality remains there can never be a complete cessation of thought; and the mind, during sleep, as well as during the waking state, continues to operate, even though in the former condition the consciousness of its operations be suspended, and though the mind may then act faintly or imperfectly; or, perhaps in a totally different way from that in which it acts during the waking state. Every one who has had occasion to sit up with invalids, and to watch them during sleep, knows that dreamers are seen to toss about in bed, to express various emotions in their countenances, are heard to moan and talk in their sleep, and are known to enact their dreams, as in the case of somnambulists, all without any recollection whatever of having dreamt, and such persons, when they are aroused from a dream in which they have given manifest signs of their state, will often insist that their sleep has been perfectly calm and undisturbed.

It is evident that the condition of the mind of a dreamer must be very different from the mental state of the same person when awake. In the latter case the current of thought (except when the individual is absorbed in deep reverie, which is a state very analogous to dreaming) is influenced and modified by the

¹ Sir William Hamilton's *Lectures on Metaphysics*, Vol. I, p. 323.

constant succession and change of external impressions transmitted by the senses. But in sound sleep, all impressions from the external world are either entirely shut out, and the mind is no longer in any degree under the dominion of their suggestions; or else, as is perhaps more frequently the case, these impressions are so faintly or imperfectly conveyed as to produce sensations and results altogether different from those they would have occasioned in the waking mind.

The laws of association of ideas, which have been applied by metaphysical writers to explain the nature of dreaming, cannot be accepted by physiological inquirers as affording any satisfactory insight into the character of this remarkable condition. For, even in the waking state, as must be obvious to every one, ideas frequently arise perfectly unconnected with any preceding train of thought, and not suggested by any cognizable external cause. It seems, I think, indubitable that the same must occur in dreams, in which state impressions or ideas, probably long existing in the mind, although obscured by more recent impressions, may, when, as is the case during sleep, the thoughts with which we are occupied are suspended, be renewed by the uncontrolled imagination acting on the memory, and bringing up before our mental sight images as distinct, for the time, as when they were originally imprinted on the mind. Such a renewal of former mental impressions, variously combined, constitutes a dream.

The theory advocated by Spurzheim, that dreams are occasioned by certain organs of the cerebrum re-

maintaining awake, while all the other portions of the brain are in the sleeping condition, affords the most plausible explanation of the *remote* cause of dreaming. This hypothesis may be easily amplified if we admit the conjecture that the exhaustion of nervous power which occasions, and is repaired by sleep, is seldom, if ever, complete; and that the unexpended nervous energy acting on the organ of the mind gives rise to dreams. The character of the dream in each case being, perhaps, influenced by some physical impression made on the waking part of the brain, and transmitted to it by the nerves from distant parts of the body.

Impressions, however, may also originate from within the brain itself, as well as be transmitted to it from without. That such may be the origin of some dreams is more than probable; for such, as far as we know, is the nature of those sensations, for example, which, patients who have undergone a capital operation, occasionally refer to limbs which no longer exist. Of a character, too, are those hallucinations of the organs of special sense that occur in the course of many febrile and nervous complaints, and also in some chronic maladies. These false perceptions of taste, sight, and hearing, occasionally commence in dreams, although they may be continued into, and influence the waking senses. Thus, for instance, a gentleman under my care suffering from dyspepsia, dreamt one night that he was compelled to eat *malgre lui*, a quantity of molasses, and on awaking perceived an intensely sweet taste on his palate. This lasted for eight or ten days, and for that time altered and per-

verted the flavor of everything the patient eat or drank. A somewhat similar case is recorded by Dr. Millingen in his "Curiosities of Medical Experience" (p. 311), in which the sense of vision was affected by an hallucination commencing in a dream. Closely related to this part of the inquiry into the nature of dreams, a subject of considerable interest in connection with the medical jurisprudence of insanity presents itself. In his well-known work on "Obscure Diseases of the Brain," Dr. Forbes Winslow narrates several instances in which dreaming appears either directly or indirectly to have led to the commission of serious crimes of various kinds. "A person," says this eminent psychological physician, "apparently well, has gone to bed without manifesting the slightest tendency to self-destruction, and on being suddenly aroused from a frightful dream has destroyed himself."¹ The same author also refers to some cases in which murder was apparently committed under the influence of dreams. And, in a communication I had the honor to read before this Society on the 21st of March, 1866, I made some observations on a very remarkable case of a somewhat similar character to those described by Dr. Winslow.²

III. VOLITION NOT NECESSARILY SUSPENDED DURING SLEEP.

We find it asserted by some physiologists that the

¹ Dr. Forbes Winslow *On Obscure Diseases of the Brain, and Disorders of the Mind*, p. 592. London: 1861.

² Doctor Thomas More Madden *On Insanity, and the Criminal Responsibility of the Insane*, pp. 15, 16. Dublin: 1866.

essential character of sleep is the suspension of volition. But this proposition is far from being generally true; unless, indeed, we admit that dreaming and sleeping are two separate states of existence. For, although the power of controlling and changing the subject of our thought, is generally suspended in dreams, yet there are many and striking exceptions to this law recorded, especially by Abercrombie and Reid, in which the dreamer had the power of stopping a dream at a particular point. And, even without referring at all to the question of somnambulism, another objection to the theory that volition is of necessity lost during the sleep, is presented by the well-known phenomena of incubus, or night-mare, in which volition, although without the power of executing the act willed, appears to be exerted. Dryden has so admirably rendered Virgil's description of this state that I cannot refrain from quoting it:—

“And as, when heavy sleep has closed the sight,
The sickly fancy labors in the night,
We seem to run ; and destitute of force,
Our sinking limbs forsake us in the course :
In vain we heave for breath, in vain we cry ;
The nerves, unbraced, their usual strength deny ;
And on the tongue the faltering accents die.”

(ÆNEID B. xii, L. 908.)

In such dreams it is evident that it is not volition, but the power of co-ordinating the movements which are willed, that is suspended by sleep. The cerebellum in dreams being probably quiescent while the cerebrum is active, and therefore no voluntary action can respond to the exercise of the will.

IV. CHARACTER OF THE VISUAL IMPRESSIONS OF DREAMS.

It is a generally received opinion that the impressions of visible objects seen in dreams are effected in the retina, from which they were originally, at some previous time, transmitted to the brain, and thence are returned during the dream by the optic nerve, and produce their impression on its ocular expansion. If this theory were correct, however, it would be impossible to explain the phenomena of dreams in persons born blind, or in whom the retina has been destroyed by disease, and who, nevertheless, continue to dream of visual objects. It therefore seems, I think, more probable that the visible objects of dreams are independent of the ordinary channels of vision, and are produced directly within the sensorium.

V. SLEEP-TALKING.

Into the question of somnambulism I shall not attempt to enter on the present occasion, as the subject is too extensive. But I should gladly, if I should ever have the time and opportunity for so doing, treat of it as a distinct and most interesting subject of investigation. I may remark, however, that in the state of sleep-talking, which is a form of somnambulism, it appears as though the mind had regained its command over the voluntary muscles which are connected with the vocal organs, and that these respond to the will, and perform their accustomed functions in proportion to the vividness of the dream as well as the strength of volition and state of health of the dreamer, being

most energetic when the sleeper's health is most delicate. In those rare cases in which the dreamer responds to questions, and to a certain extent is capable of entering into conversation while still asleep, the person's condition is evidently that of partial or imperfect sleep. For not only is the external impression transmitted through the portio mollis of the seventh cerebral nerve in the ordinary manner, but, moreover it produces its ordinary action on the portion of the brain connected with the sense of hearing, and volition is excited and transmitted to the voluntary muscles of the parts by which the response is made, thus clearly showing that these organs are not under the dominion of sleep.

VL. TRANSITORY CHARACTER OF THE MENTAL IMPRESSIONS MADE BY DREAMS.

The evanescent nature of the impressions made on the mind by dreams is a matter of familiar observation. It is nearly always exceedingly difficult and generally, indeed, impossible to recall to memory, an hour or two after we awake, the very subject of even the most vivid dream; and when we do succeed in recalling the subject, our recollections are generally vague, indefinite and obscure. This very curious fact has, I believe, never been in any way accounted for. The only condition that appears to present an analogy in this respect to dreaming, is the state produced by the action of certain stimulating narcotics, such as alcohol, opium, and chloroform, under the influence of which acts are performed and things are suffered of which no trace

at all (or at any rate one as indistinct as the recollection of a dream) is left on the memory when the effect of the drug has passed off.

VII. "SLEEP-INDUCING HALLUCINATIONS."

Under the above name, Mons. Maury and other recent French writers on this subject describe a form of spurious dreaming which presents a very close analogy to insanity, and that which M. Maury states is very common even in persons whose mental as well as bodily health are equally good. These "sleep-inducing hallucinations," as they are called, consist of spectra, which appear before the mind just at the moment of sleep, and which, according to M. Maury, are reproduced in the ensuing dream.¹ My own observations however, lead me to think that this phenomenon is not so commonly met with as the writer I have just referred to, supposes. In fact, of the very large number of persons I have questioned on this subject very few indeed were conscious of these "pre-somniferous hallucinations." I know one person to whom they sometimes occur, but as far as he is conscious of, are never reproduced in the succeeding dream. Occasionally these hallucinations are so vivid that the delusion continues even after the eyes are open. Some months ago, after having passed a restless night, this individual was dozing off towards morning, when in the transition-state between sleeping and waking, two spectra, whose

¹ *Le Sommeil et les Rêves, &c., &c., par M. L. F. Alfred Maury, Membre de l'Institut, Paris ; 1862.*

faces he felt quite familiar with, though they were of colossal size and were clad in the costume of last century, appeared standing one at each side of the foot of the bed, over which they leaned upon their halberds. To assure himself that he was not dreaming, he opened his eyes and sat up in the bed, but the hallucination still continued for some time as distinctly as before, and then suddenly disappeared. This case presents a good example of the close resemblance between the phenomena of the state just described and insanity. Here was an impression produced by a hallucination on one of the senses, which was as vivid, for the time, as if it had been produced by an objective cause, and had this hallucination extended to the other senses, and if the person had not been able to reason rightly that this impression was unreal, the illusion would have become a delusion, and the individual would have been insane. So nearly do the confines of sanity and insanity approach in dreams. The individual to whom the foregoing hallucination occurred, explained it by "The Laws of Association," as laid down by the Rev. Dr. Wills. For, the day after the dream I have spoken of, this gentleman visited the exhibition of the Royal Dublin Society, and there, to his surprise, recognized the figures he had seen in his dream in the mutes in Mr.—'s excellent painting of "Goldsmith's Mourners," which, he says, must have impressed itself on his mind at a preceding visit, although he could not recollect having seen it before.

The most noticeable points of resemblance between dreaming and insanity are the loss of all power of

discriminating between the possible and the impossible, the absence of surprise at the most astonishing scenes and events, and the ready credulity with which absurd contradictions and impossibilities are quietly accepted by the mind as facts. Another peculiarity of the mind in dreaming, is want of consecutiveness, and connexion between the various dreams which succeed each other, the mind passing with ease from one subject to another in no way connected to it, in the same manner as it also does in insanity.

VIII. OCCASIONAL MANIFESTATION OF MENTAL POWER DURING DREAMS.

One of the most remarkable phenomena in connection with dreaming is the occasional manifestation of intellectual activity by persons in this condition. Though this fact is doubted by some psychologists, and amongst others by Rosenkrantz and Baron von Feuchtersleben, who asserts that "intellectual problems are not solved in sleep, because intense thought is without images, whereas dreaming is a creation of images."¹ This assertion, however, is directly opposed to many well-known cases, in which the full powers of the mind have been exercised by persons apparently in a sleeping condition.

Sir Thomas Brown goes so far as to believe that "Sleep is the waking of the soul; the ligation of sense, but the liberty of reason." Condillac states that while

¹ Von Feuchtersleben, *Medical Psychology*, p. 167.

engaged in his "Cours de Etude," he frequently developed and finished in his dreams a subject which had engaged his attention when he retired to rest. Condorcet had presented to him in sleep the solution of a difficult calculation that had puzzled him all the preceding day.

"Nous avons quelquefois," says Cabanis, "en songes des idées que nous n'avons jamais eues. Nous croyons converser, par exemple, avec un homme qui nous dit des choses que nous ne savons pas. J'ai connu un homme très-sage et très-éclairé (Franklin) qui croyait avoir été plusieurs fois instruit en songe de l'issue des affaires qui l'occupaient dans le moment." Cabanis accounts for this by supposing that the mind continues to occupy itself in such cases with its waking thoughts, and continues these with the fictitious creations of the dreaming imagination.¹ The same thing is said to have occurred to Brindley, the engineer, when constructing the Bridgewater canal. Dr. Gregory, too, stated that he found his dreams often occupied by thoughts and arguments "so just in point of reasoning and so good in point of language," that he made use of them in his lectures.

Goethe says in his *Memoirs*: "The objects which had occupied my attention during the day, often reappeared at night in connected dreams. On awaking, a new composition, or a portion of one I had already commenced, presented itself to my mind. In the morning

¹ Cabanis, *Rapports du Physique et du Moral de l'Homme*, 8th edition. Paris: 1844. P. 574.

I was accustomed to record my ideas on paper."¹ In Lord Jeffrey's life it is stated that this judge of unenviable notoriety entertained a somewhat similar opinion. "He (Lord Jeffrey) had a fancy that though he went to bed with his head stuffed with the names, dates, and other details of various causes, they were all in order in the morning, which he accounted for by saying that during sleep they all crystallized round their proper centres."²

The well known history of the composition of Coleridge's poem of "Kubla Khan," during sleep, may also be here cited as a further illustration of my statement. We read that in the summer of 1797 Mr. Coleridge, being then *in ill health*, was rustivating in a quiet farmhouse in the country. On one occasion, having previously taken an anodyne, he fell asleep in his chair, while reading in "Purchas Pilgrimages" a passage referring to the Khan Kubla. He slept on for three hours, and during this time, as he subsequently asserted, he had the most perfect confidence that he composed from two to three hundred lines of poetry whilst still asleep, and did not experience the least consciousness of effort in so doing. When he awoke he had a perfect recollection of the whole poem, and instantly wrote down the fragment which exists of "Kubla Khan." But whilst thus engaged he was called out of the room for about an hour, and on his return he found that he had lost all distinct recollection of the poem, although

¹ Goethe's *Memoirs*, p. 126. London: 1824.

² Lord Cockburn's *Life of Lord Jeffrey*, vol. i, p. 243 (note).

he still retained a dim consciousness of its general purport, and even remembered a few scattered lines.¹ The late Sir B. Brodie (in his "Psychological Inquiries") relates a somewhat analogous case, in which a friend of his, whose mind had been deeply occupied with some abstruse scientific point, about which he failed to satisfy himself, imagined that the matter had been cleared up suddenly in a dream. It would be easy to add to these cases, but enough has been said to prove that the exercise of mental power is not incompatible with the sleeping state.

It must be admitted, however, that such cases as the foregoing are comparatively rare exceptions, and that the faculties most commonly exercised in dreams are the memory and the imagination, unbridled by the judgment.

The sense of the ludicrous is occasionally highly developed in dreams. I know a gentleman who seldom indulges in a pun when awake (although when he does attempt them they are generally good), but when asleep he frequently fancies that he has made a capital pun, which amuses him exceedingly at the time, though on recalling—which he can always do in the morning—he finds that it is very far from being as witty as he had supposed.

Sir Thomas Brown thus recorded his own experience on this subject—"I am in no way facetious, nor disposed for the mirth and galliardise of company; yet in one dream I can compose a whole comedy, behold the

¹ Coleridge's *Poems*, Aldine edition. London: 1848. P. 214.

action, apprehend the jests, and laugh myself awake at the conceits thereof. Were my memory as faithful as my reason is then fruitful, I would never study but in my dreams, and this time also would I choose for my devotions; but our grosser memories have then so little hold of our abstracted understandings, that they forget the story, and can only relate to our awakened souls a confused and broken tale of that that hath passed."

IX. THE REAL AND THE APPARENT DURATION OF DREAMS.

The rapidity with which events that appear to have occupied long periods of time pass before the mind in dreams is another very interesting question. "In dreams," says Dr. R. R. Madden, "the time occupied by the playing out of entire scenes of an ideal drama, the wonderful incidents of which could not be described (were they to be written down) in half an hour, is often hardly appreciable; sometimes it is estimated by seconds, at other times by minutes."¹ This fact is so generally admitted that I have referred to it only in consequence of some remarks in the Rev. Dr. Wills' learned paper "On Dreams," in which he says: "It seems probable that most dreams occupy the same time which the same succession of ideas would in waking; there seems at least no ground for the contrary opinion."²

¹ Dr. R. R. Madden, *Phantasmata, or Illusions and Fanaticisms of Protean Forms Productive of Great Evils*, vol. i, pp. 92. London: 1858.

² Rev. Dr. Wills, *On Dreams*, Transactions Royal Irish Academy. 1859. Part 2d.

It would be easy, however, to quote numerous instances in refutation of this theory of Dr. Wills. Very interesting illustrations of the inaccurate perception of the time occupied by dreams are given in Lord Brougham's "Discourse on Natural Theology," and also in Dr. Winslow's work, "On Obscure Diseases of the Brain." Dr. Abercrombie narrates the following instance of this: "A gentleman dreamt that he had enlisted as a soldier, joined his regiment, deserted, was apprehended, carried back, tried, condemned to be shot, and at last led out for execution. After all the usual preparations a gun was fired; he awoke with the report, and found that a noise in an adjoining room had both produced the dream and awakened him."¹ The late Sir B. Brodie's remarks on this topic are very suggestive. He says: "If we were to pursue this subject it would lead us to some curious speculations as to our estimate of time, and the difference between the real and the apparent duration of life. . . . The apparent duration of time is longer or shorter in proportion as a greater or smaller number of different states of mind follow each other in succession."²

From the foregoing observations we may, I think, arrive at the conclusion that neither of the two theories—one or other of which are most generally adopted with regard to dreams—*i.e.* that which

¹ Dr. Abercrombie, *Inquiries Concerning the Intellectual Powers*, pp. 234. London: 1853.

² Sir Benjamin Brodie, *Psychological Inquiries*, part 1st, pp. 149. London: 1862.

teaches that dreams depend on the association of ideas, on the one hand, and that which supposes their origin in bodily sensations on the other—afford any satisfactory explanation of the phenomena of dreaming, though, as has already been shown, both these causes, either alone or combined together, frequently do influence the state of the mind in sleep. But to assert that a dream is occasioned by some physical sensation, or by the association of ideas, affords, I think, little insight into the real nature of a mental condition in which the images set before us, and the impressions produced upon the mind are as vivid, and apparently as actual, as those transmitted through the waking senses, and far more distinct than those which can be called up by any voluntary exercise of the memory. Nor do these theories in any wise explain or even throw the least light upon the singular exaltation of the mental powers, or at any rate of certain faculties of the mind, such as the imagination or the memory, which occasionally occur in the dreaming state.

Too many well-authenticated facts are recorded concerning this mysterious condition of the mind to permit us to doubt that manifestations of a nature which cannot be explained by any reference to physical laws, have taken place during sleep. To all these cases I would apply the words of Bossuet, when speaking on the same subject—"Il y a," he says, "*des choses tres admirables qui échappent a notre vue et qui n' sont ni moins vrais, ni moins desirables, quoiqu'on ne les puisse ni comprendre ni imaginer.*"¹ I have

¹ *Chefs d'Œuvres de Bossuet*, p. 449. Paris edition. 1829.

collected a very large amount of facts bearing on this branch of the present inquiry. This, however, would not be a proper place for entering into the consideration of so extensive, though so important and interesting, a topic. But I would gladly recur to it, should I be again afforded an opportunity of doing so. The subject, however, which we have now to consider is one of a very different character from the foregoing—namely, the physiology of dreaming.

X. THE PROXIMATE CAUSE OF DREAMING.

It is probable that dreaming is intimately connected with the peculiar state of the cerebral circulation during sleep. In proportion to its size no part of the body receives so large a supply of blood as the brain, and none of the other organs of the human frame are provided with such exquisite adaption of structure for the maintenance of a healthy and constant equilibrium between the contents of the veins and arteries as it is. I should apologize to this learned Society for alluding to what must be familiar to every member present, were it not that this reference to the physiology of the cranial circulation is indispensable to the consideration of the physiology of dreaming.

We should therefore bear in mind that, in consequence, probably, of its high vitality and complex organization, the brain requires and receives a constant and very large supply of blood, amounting, as physiologists assert, to no less than one-fifth of the entire quantity of blood in circulation in the body. And certainly in no part of the frame do we find such

ample provision for the supply of a due amount of arterial blood, and, more especially, such a provision made for the constant equilibrium between the relative proportion of venous and arterial blood, as within the cranial cavity, provided, as it is, with four great arterial trunks, numerous veins, sixteen large sinuses, and a most remarkable system of anastomosis, not confined, as in other parts, to the capillary branches, but occurring, as in the circle of Willis, directly between the large arteries. Moreover, the cerebral vessels are peculiarly fitted for the maintenance of the balance of the circulation between their veins and arteries by the middle or contractile muscular coat of the cerebral veins being developed in a way which does not exist in other parts of the venous system.

The majority of recent physiologists appear to agree with Mr. Durham, in the conclusions he arrived at from his elaborate experiments on this subject, namely, that—"During sleep the brain is in a comparatively bloodless condition; and the blood in the encephalic vessels is not only diminished in quantity, but moves with diminished rapidity."¹ The following case, observed at Montpellier, very strongly confirms this opinion: "A woman having lost part of the skull, from disease, the corresponding portion of the brain and its membranes remained exposed. When she was in a deep or sound sleep, the brain lay in the skull almost motionless; when she was dreaming it became

¹ Mr. Durham *On the Physiology of Sleep*—*Guy's Hospital Reports*. London: 1860. P. 24.

elevated ; and when her dreams (which she related on waking) were vivid or interesting, the brain was protruded through the cranial aperture."¹ It must be borne in mind that in this case, and in those in which a portion of the cranium has been removed purposely, as was done in Mr. Durham's most interesting experiments, the brain and its membranes were in an abnormal state, and therefore such observations must be regarded as more or less unsatisfactory, and liable to error. Indeed, so far are we yet from an accurate knowledge of the true vascular condition of the brain during sleep, that in a work published within the last few years by a very distinguished member of the Institute of France, we find it asserted that "during sleep the brain is in a state of passive congestion."²

Opposite as these opinions may appear, it will, I think, be found that dreaming is best explained by adopting both these conjectures in part. If we combine these theories thus, we may suppose that dreams are caused by a partial relaxation of the tonic contractility of the cerebral veins, which limits the amount of blood that passes through these vessels, and that thus the different parts of the encephalon may be in very different conditions at the same time. For instance, the blood may be moving with much greater force and rapidity through the capillaries of the base of the brain than in those of the superior portions of the hemispheres. Or, in other words, that

¹ Caldwell in *Psychological Journal*, vol. v. p. 74.

² Mons. L. F. Maury, *Le Sommeil et les Rêves*, Paris : 1862.

something like active congestion, confined to a small portion of the brain, occurs. And if, as it has been conjectured, the localities or parts of the cerebrum are subservient to the several functions of the mind, (a point on which I offer no opinion, however), by this theory we might more easily comprehend the phenomena of a state marked by the activity of certain of the mental powers, whilst the rest are for the time suspended. But, without any reference to phrenological views, I think that the state of the cerebral circulation during sleep seems to be immediately connected with dreaming, and probably there is then some alteration in the vascular condition of the superficial gray structure of the brain during sleep modifying the character of the nervous force evolved by it. What the nature of this supposed change in the action of the brain during sleep consists in, is a matter which we must necessarily remain utterly ignorant of. For, in truth, nothing is known of the nature of the cerebral action by which nervous force is evolved at any time or under any circumstances; and modern physiologists have done little more than re-echo the often repeated and as often contradicted assertion, that all the operations of the mind are accompanied by a molecular change in the cortical or vesicular substance of the brain.

If this theory be correct, it does not lessen the interest attaching to this most remarkable condition of the mind. The physical change in the vesicular structure of the brain, which I have described as probably connected with dreaming, if it does really occur

at all, as I have supposed (for where proof is impossible a reasonable conjecture is all that can be offered in its place) is merely an accompaniment, and cannot be regarded as the cause of dreaming. For this vesicular change could only take place in consequence of some primary existing cause, which we may suppose to be the action of the mental principle.

XI. THE PATHOLOGICAL INDICATIONS FURNISHED BY DREAMS.

Having now discussed the physiology of dreaming, we may next proceed to consider its pathological and medical aspects. In the earliest annals of every country we find that the interpretation of dreams was a part of the office of the physician. In the treatise "On Dreams," commonly ascribed to Hippocrates, in the last volume of "Saxon Leechdoms," published in 1866 by direction of the Master of the Rolls; and in an ancient Irish Medical MS., a translation of which, by Mr. O. Longan, may be found in the MS. collection of the Royal Irish Academy, we find sufficient proof, without referring to other authorities, of the same importance being attached to those signs of disease which were supposed to be furnished by dreams, in countries and ages very remote from each other.

Opinions that are very wide-spread and generally adopted, are seldom devoid of some foundation in truth; and although the subject I am treating of has now passed completely out of the hands of medical writers, who regard it as something puerile and unworthy of scientific investigation, I shall endeavor to

show that this view of the matter is not altogether just, and that something may occasionally be learned by attending to the peculiar character of our patient's dreams in certain cases.

The phenomena accompanying any deviation from the normal quantity of blood in the encephalon, and the functional disturbance of the brain resulting therefrom, as evinced under all circumstances that occasion either an augmented or diminished supply of arterial blood, naturally lead us to anticipate that similar circumstances will act still more potently in sleep, when the intellectual operations are more directly under the influence of physical and internal causes.

The early physicians were evidently aware of this; thus, the "Father of Physic," or at least some cotemporaneous Greek physician, laid down the theory that—"Such dreams as represent at night a man's actions during the day, and exhibit them in the manner in which they occurred, namely, as performed well, and justly deliberated, these are good to a man, and prognosticate health, inasmuch as the soul perseveres in its diurnal cogitations, and is not weighed down by any repletion, evacuation, or any other external accident. But when the dreams are very opposite to the actions of the day, and when there is a conflict between them—when this happens, I say, it indicates a disorder in the body; when the contrast is great, and when the one is small, the other is small also."¹ An English philosopher of the seventeenth

¹ Dr. Adam's translation of Hippocrates, Sydenham Society Edition. London: 1849. Vol. i. P. 83. 1

century, Thomas Hobbes, propounds the following theory on this subject: "And seeing dreams are occasioned by the distemper of some of the inward parts of the body, divers distempers must needs cause different dreams."¹

A renowned physician and philosopher of the same century, Guy Patin, says:

"Il est constant que l'on peut connaître par les songes quelque disposition corporelle. Je suis la-dessus du sentiment de Sainte Thomas, quand il dit: 'Medici dicunt esse intendendum somnis ad interiores dispositiones.' En effet, les malades songent d'ordinaire autrement que ceux qui se portant bien; les mélancholiques autrement que les sanguins; les bilieux autrement que les pituiteux; mais je m'en tiens là, sans tirer d'autres conjectures sur les choses libres et de pur hasard, jusqu'à ce que je croye qu'il y ait du surnaturel dans ce qu'on à songe; alors je rappelle dans ma mémoire l'histoire de Joseph, de Daniel, &c., pour m'y soumettre comme à des moyens dont l'Eternel se sert pour faire connaître aux hommes ses volontés."²

I regret exceedingly that my space obliges me to omit Sir Thomas Brown's observations on this topic in his most eloquent work, the "*Letter to a Friend on the Death of an intimate Friend.*"

Albers, as cited by Baron von Feuchtersleben, enumerates the following as among the most approved signs to be obtained from the medical interpretation

¹ Thomas Hobbes (of Malmsbury), *Leviathan*. Part 1st. Chap. ii. P. 7.

² *L'esprit de Guy Patin*. P. 132. Amsterdam: 1710.

of dreams. He says: "Lively dreams are, in general, a sign of the excitement of nervous action. Soft dreams a sign of slight irritation of the brain; often, in nervous fevers, announcing the approach of a favorable crisis. Frightful dreams are a sign of determination of blood to the head. Dreams about fire are, in women, signs of an impending hæmorrhage. Dreams about blood and red objects are signs of inflammatory conditions. Dreams about rain and water are often signs of diseased mucous membranes and dropsy. Dreams of distorted forms are frequently a sign of abdominal obstructions and disorders of the liver. Dreams in which the patient sees any part of the body especially suffering, indicate disease in that part. Dreams about death often precede apoplexy, which is connected with determination of blood to the head. The nightmare (incubus, ephialtes), with great sensitiveness, is a sign of determination of blood to the chest." "To these," says Baron von Feuchtersleben, "we may add that dreams of dogs, after the bite of a mad dog, often precede the appearance of hydrophobia, but may be only the consequences of excited imagination."¹

Dr. Forbes Winslow quotes several cases in which dreams are said to have been prognostics: "Arnaud de Villeneuve dreamt one night that a black cat bit him on the side. The next day an anthrax appeared on the part bitten. A patient of Galen's dreamt that one of his limbs was changed into stone. Some days

¹ The Principles of Medical Psychology. Translated by Dr. Babington and Mr. Lloyd. P. 198.

after this leg was paralyzed. Roger d'Oxteyn, Knight of the Company of Douglas, went to sleep in good health; towards the middle of the night, he saw in his dream a man infected with the plague, quite naked, who attacked him with fury, threw him on the ground after a desperate struggle, and, holding him between his open thighs, vomited the plague into his mouth. Three days after he was seized with the plague, and died. Hippocrates remarks that dreams in which one sees black spectres are a bad omen."¹

So far we have traced the literature of this subject, from the earliest time down to the latest work of authority on psychological medicine, and it only remains now to add a few practical observations on the signs of disease—especially of mental disease—furnished by dreams occasionally.

Fearful dreams, if frequently repeated, may eventually influence the permanent state of the mind, and considering the close resemblance between the phenomena of dreaming and insanity, which Sir H. Holland defines as "a waking and active dream,"² we may expect that the former condition, if prolonged, might pass into the latter state. Insanity occasionally does commence in a dream that continues after the cessation of sleep, and cases are recorded in which persons recovering from mental alienation were nightly disturbed in their dreams by the same hallucinations

¹ Quoted by Dr. Forbes Winslow in *Obscure Diseases of the Brain*, &c P. 589.

² Sir Henry Holland. *Chapters on Mental Physiology*. P. 110.

which had previously haunted them in the waking state.¹

Esquirol regarded dreams as capable of furnishing valuable indications in some obscure cases of insanity in which the subject of the mental disorder was carefully concealed during the day, but was revealed in sleep by watching the patient's dreams. M. Brierre de Boismont also records several cases in which the patient's dreams lead to a discovery of the nature of the mental disease from which they suffered.²

The derangement of the cerebro-spinal functions accompanying fever is, in all cases, greatest towards night, at which time, even in mild cases, some degree of delirium or wandering is commonly observed. Now, if this take place while the patient is still awake, and subject to the influence of external impressions, how much more readily will such derangement be produced when the mind is no longer under the correction of the senses. The disturbed dreams of fever-patients are probably caused by the general vascular excitement, by some local irregularity of the cerebral circulation, and, perhaps, more directly by the action of the fever poison in the blood on the vesicular structure of the brain. And to the imperfect elimination of this poison from the blood, we may also attribute the painful and disagreeable dreams which often continue for some time to disturb the repose of persons convalescing after severe attacks of fever.

¹ See Dr. Brierre de Boismont. *Des Hallucinations*. P. 233. Paris: 1845.

² *Des Hallucinations*. Pp. 232, 233. Paris: 1845.

Severe fevers are also very frequently preceded for days by "*Parcniria*," or morbid dreaming, which is probably produced by the direct action of the fever-poison on the highly sentient brain-structure before it occasions its constitutional symptoms. The exanthemata are very commonly presaged by fearful dreams. Rhazes, the Arabian physician of the ninth century, notes, among the signs of approaching small-pox, "terrors in sleep." He regarded this prognostic as of considerable importance, and says: "When, therefore, you see these symptoms, or some of the worst of them (such as the pain of the back, and the *terrors in sleep* with the continued fever), then you may be assured that the eruption of one or other of these diseases is nigh at hand."¹ Intermittent fever is often announced several days before any of the recognized symptoms set in, by persistent dreams of terrifying character. I have experienced this in my own person, and heard it confirmed by other sufferers on the African coast. The following case of morbid dreaming, ushering in yellow fever, I subjoin in the words of the gentleman, to whom it occurred, himself a medical man, holding a high official position on the Gold Coast when it occurred:

"In the early part of 1840, I was an inmate of Cape Coast Castle, and as some repairs were then being made in the Castle, the room assigned to me was that in which the ill-fated L. E. L. (Mrs. Maclean), the wife of the Governor of Cape Coast, had been found dead,

¹ Rhazes On the Small-pox and Measles. Translated from the Arabian by Dr. Greenhill. P. 34. London, 1848.

poisoned by prussic acid, not very long previously. I had known her in London, and had been intimately acquainted with her history, and much interested in it. Her body had been found on the floor, near the door, and in front of a window. After a fatiguing excursion to some of the adjoining British settlements on the coast, having retired to rest, I awoke disturbed by a dream of a very vivid character, in which I imagined that I saw the dead body of the lady who had died in that chamber lying on the floor before me. On awaking, the image of the corpse kept possession of my imagination. The moon was shining brightly into the part of the room where the body had been found, and there, it seemed to me on awaking, it lay pale and lifeless as it appeared to me in my dream.

"After some minutes, I started up, determined to approach the spot where the body seemed to be. I did so, not without terror, and walking over the very spot on which the moon was shining, the fact all at once became evident and obvious that no body was there—that I must have been dreaming of one. I returned to bed, and had not long fallen asleep, when the same vivid dream recurred—the same waking disturbance occurring while awake. As long as I lay gazing on the floor I could not dispossess my mind of that appalling vision; but when I started up and stood erect, it vanished at the first glance.

"Again I returned to bed, dozed, dreamt again of poor L. E. L.'s lamentable end, and of her remains on the same spot; again awaked, and arose with the same strange results.

There was no more disturbance that night, of which, at least, I was conscious, but, when morning came, fever was on me in unmistakable force, in its worst form, and partial delirium set in the same night. I was reduced to the last extremity about the third or fourth night of my illness, when a conviction seized on my mind that it was absolutely essential to my life that I should not pass another night in Cape Coast Castle. I caused the negro servant I had fortunately brought out with me from England, to have a litter prepared for me at dawn, and, stretched on this litter, hardly able to lift hand or foot, I was carried out of my bed by four native soldiers, and was conveyed to the house of a merchant and countryman of mine, to whose care and kindness I owe my life. So much for a visionary precursor of fever on the West Coast of Africa."

In neuralgia, disturbed dreaming is occasionally a prominent symptom. In one obscure case I was led to make what I believe to be a true diagnosis from the indications furnished by the patient's dreams. The individual in question is a man aged about 45, of an anæmic habit, confined by a sedentary occupation, who, for many years, had suffered from hemicrania, which lately had become more intense, and the intervals shorter. A couple of days before the attack, his sleep becomes broken by unpleasant dreams, and when the paroxysm has attained its height, he invariably dreams that he is the helpless victim of a persecutor, who finishes a series of torments by driving a stake through his skull, after which he becomes insensible.

During his recovery from each attack, he states that his dreams are of a most agreeable character, though so vague that he cannot give any account of them. The frequent repetition of this dream leads me to conclude that there is some osseous growth within the cranium, and that the vascular distention accompanying the neuralgic attack, occasions pressure upon this, giving rise to the sensation I have referred to, while the subsequent feeling of comfort results from that pressure being removed.

Cardiac disease and hydro-thorax, which occasionally interferes with the functions of the circulatory apparatus, are often attended with disturbed dreaming. "Persons," says Dr. Copeland, "laboring under disease of the substance or valves of the heart, are subject not only to imperfect or disturbed sleep, but also to fearful dreams; and, if they fall asleep in an uneasy position, or on the left side, in some cases they generally waken up soon from a fearful dream, as falling down from a precipice, drowning, &c.; their dreams being more pleasant when the position is more comfortable."¹ "Paroniria," is also very frequently occasioned by disease or irritation of some remote part or organ of the body; and, in many instances, morbid dreaming may be directly traced to the influence of some article of diet. Thus, for example, I am acquainted with a lady, who, if she takes tea in the evening, is not kept awake by it, as some persons are, but when she falls asleep, is thrown by

¹ Dr. Copeland: Dictionary of Practical Medicine. Art. Sleep; vol. iii, part ii. P. 805. London: 1858.

it into a state of horrible dreaming, from which she always awakes up suddenly, under the illusion that a number of shadowy figures are sitting crouched upon every chair in her room. She is quite sensible, at the time, of its being an hallucination, but still cannot banish this idea from her mind. I need not make any remarks on the analogy which this kind of dreaming presents to the symptoms of incipient insanity, although, in reality, very different from that state, as I already have spoken on this point in my comments on another case of this kind which I described.

XII. THE TREATMENT OF "PARONIRIA," OR MORBID DREAMING.

Cases occasionally occur in medical practice, in which the patient complains of nothing whatever but morbid dreaming and its effects, and in which this one complaint, trivial as it might at first appear, is sufficient to destroy either his mental or bodily health, or both.

Some years ago, I had a patient under my care, whose principal complaint was "paroniria," as morbid dreaming has been termed by some writers; and a most formidable disease it was. This individual, who was a person of a highly nervous temperament, had been suffering for some time from severe dysentery, the result of a long residence in a tropical climate, and when he came to me was greatly weakened by this malady. The dysentery gradually subsided under treatment, and then I lost sight of him for several months, at the expiration of which he returned, look-

ing worse than ever. He was miserably thin, and so nervous that the sudden closing of the door alarmed him. His memory was affected to a great degree, and he was afraid to speak to his familiar acquaintances, having lost all recollection of their names. There had been no return of the dysentery; he suffered from no pain, but had lost his appetite, and was extremely weak. Having told me all this in reply to my questions, he added—"I am half ashamed to tell you how much I dread night and bed-hour, as I have such horrible dreams that for several successive nights I have not gone to bed at all, but slept a little in a chair." In short, this was a well-marked case of "paroniria" which, I may add, was finally cured by a combination of moral and physical remedies, with the necessary medicines. But I have very little doubt that, had this symptom been neglected much longer, the case would suddenly and speedily have passed from the state of *premonitory* into that of *confirmed* insanity. In these cases, the hallucinations, as pointed out by Dr. Forbes Winslow, appear to be most vivid at night. "When the patient is placed in a recumbent position, on account, it is conceived, of the mechanical facilities thus afforded for the blood gravitating freely to the head."¹

The first indication in the treatment of morbid dreaming is to remove the primary morbid action or condition, of which disturbed dreaming may be merely

¹ Dr. Forbes Winslow On Obscure Diseases of the Brain, and Disorders of the Mind. P. 563. London : 1861.

a symptom. Thus, for instance, if an unduly acid state of the gastric juice be, as it often is, the cause of uneasy dreaming, we may cure this by alkaline remedies. If, again, we can trace—as, indeed, in most cases of “paroniria” we may—the morbid dreaming to the reflect irritation occasioned by the accumulation of excrementitious matter in the intestinal canal, purgatives should be administered, and in nine out of ten cases of this kind they will remove the cause of complaint. But if the blood be loaded with lithic or lactic acid (for we will generally find that our gouty and rheumatic patients complain of uneasy sleep and distressing dreams, the transmission of these “blood-poisons” through the brain, oftentimes giving rise to nervous irritation and excitement, which is most marked during sleep in the patient’s dreams) it will then be necessary, in the first place, to correct this viciated state of the blood by mineral waters and other appropriate remedies. In a word, to cure morbid dreaming, we must endeavor to put our patient in the most favorable circumstances for sound and healthy sleep, by removing, as far as possible, every source of nervous irritation.

In conclusion, it only remains for me to apologise for the length of this communication, the only excuse I can offer for which is its importance in relation to the study of insanity. I shall be well satisfied, without aspiring to the merit of any very original theory on the subject of dreaming, if the concise view I have afforded of the pathological indications which are furnished by certain forms of dreaming may attract more

attention to this question than has hitherto been given to it by medical writers on insanity. The only way to study the diseased actions of the insane mind with advantage is to investigate the healthy actions of the sane mind; and no condition of the mind in health presents so strong an analogy to the condition of the mind in disease as dreaming, and, therefore, I think that an inquiry into this state is well calculated to throw light on the causes, the nature, and even the treatment of insanity.—(*Medical Press and Circular.*)

The Application of Electricity to Therapeutics.¹

By M. BECQUEREL, Member of the Institute, &c.

(Translated for the Quarterly Journal of Psychological Medicine and Medical Jurisprudence, from the *Revue des Cours Scientifiques*, March 23 d 1867. By E. S. DUNSTER, M. D.)

PART I.

ELECTRO-THERAPEUTICS BEFORE THE DISCOVERY OF THE VOLTAIC PILE.

WHEN an energetic agent is discovered in nature, the physician who desires to relieve those who suffer from ill-health, tries its action on the diseased organs, in the hope of effecting a cure which medical science

¹ This article is a Report presented to the Academy of Sciences in the name of a committee composed of M M. Serres, Velpeau, Rayer, J. Clocquet, Longuet, Robin. (Becquerel, *Reporter.*)

has attempted in vain. Should the efforts succeed, we collect and collate the observed facts, and deduce from them certain relations or laws ; science, therefore, begins where empiricism ends. The application of electricity to therapeutics is still in its infancy, notwithstanding that it has already given satisfactory results in certain cases. The fact of these results not being more numerous, is, doubtless, due to the very complex effects of this mode of treatment.

More than 600 years before the Christian era, the Greeks were acquainted with the property which amber possesses, when rubbed, of attracting light bodies which are presented to it. Grasping with avidity at the marvellous, they ascribed to this substance a soul, and attributed to it miraculous properties.

In the time of Pliny, amber was sought after on account of its medical properties ; women and children, in particular cases, wore necklaces of it, a usage that has come down even to our time, but, just at present, almost fallen into disuse. Appian reports that the electric shock from the torpedo—a discharge which nowise differs from that of the Leyden jar—was used for the cure of gout and paralysis. Vossius adds, that, in his time, it was used for the cure of inveterate headaches. At the present time, we employ electricity in these same diseases.

It appears, according to Thomson, who wrote a natural history of the animals of Western Africa, that from time immemorial, the negro tribes of Central Africa have availed themselves of the electric proper-

ties of the *Silurus* to cure their sick children. The children were placed in a tub of water with the fish, which occasionally sent forth its electrical discharges. The electricity probably acted in these cases only by exciting muscular movements as do gymnastic exercises.

We must then pass over some centuries before we come to the discovery of the Leyden jar, in 1746. From this period the application of electricity to therapeutics took such an impulse that it was then believed the electrical agent was analogous to the principle of life.

The remarkable experiments with this agent produced such an effect upon those who first received the shock, that Musschenbroeck wrote to Reaumur that he would not try it again for the whole of France. The impression he received was such, that he could not breathe, and for two days afterwards, he had scarcely recovered from the emotion and malaise experienced. Winkler also assures us that the first discharge from the Leyden jar gave him a cramp over his whole body, and that his blood became agitated to such a degree, that, fearing a hot fever, he had recourse to refrigerant remedies. However, the prejudices in regard to the danger experienced from the Leyden jar became diminished, and attention was paid to its medical applications.

Nollet appears to have been the first who applied electricity to therapeutics. He began by observing the effects which its long-continued action produced upon liquids: he observed that it hastened their evaporation, and that this was greater in proportion to

the size of the opening in the vessels which contained the fluid.

Boze observed, about the same time, that electrified water flowed from capillary tubes in jets instead of by drops as ordinarily. These two experiments, which were due to the repulsion excited between bodies charged with the same kind of electricity, were regarded as of great importance by all physicists who, from that time, occupied themselves with the application of electricity to medicine. But they really led to nothing; they believed, for instance, that from this they were able to conclude that electricity accelerated the circulation of the blood; but experiment was not long in demonstrating the contrary to be the fact.

Bertholon and Jalabert applied electrical discharges, as Nollet had done, to the treatment of paralysis. They also killed animals with powerful shocks in order to ascertain the disorders thus produced. In a frog, whose thorax they laid open, the lungs were inflated and forced from the body by the expulsive action of electricity; the heart continued to beat for some minutes; in another frog they caused a strong current to pass through the head and body, with the result of producing a kind of extension of all the limbs; an hour afterwards it had returned to its natural condition. This is the first recorded instance of tetanus produced by electricity.

Next appeared Franklin's theory. He claimed that there existed in every substance a certain quantity of electrical fluid; if this quantity were increased, the body was positively electrified, if diminished, it was

negatively electrified. Physicists and physicians, led astray by this theory, believed that whenever the human body, by reason of any functional disturbance, was no longer in a normal condition, there was a diminution in it of the amount of electrical fluid; hence, in such a case it was necessary to restore to it a certain amount. This theory, which is now mostly abandoned, is, however, still maintained by some physicians.

To apply electricity for the purposes of curing disease, they made use of machines of sufficient strength to produce a constant and more or less powerful stream of sparks, of Leyden jars of different sizes, and of insulated stools and receivers of various forms which they extolled as infallible means of cure. With the Leyden jars they gave shocks; with the receivers they directed sparks to different parts of the patient's body; they also administered electricity in baths as is done to-day. They believed that they had discovered electricity was of service:—1st. In contractions which depended on affections of the nerves. 2nd. In sprains after the inflammation had subsided. 3rd. In indolent tumors. 4th. In some cases of paralysis. But it must be said their various modes of treatment were not based upon physiological experiments. We will remark also, in passing, that these pathological conditions are precisely those in which, at the present day, electricity is used.

Electro-Therapy was just in this condition when Volta made his memorable discovery.

PART II.

ELECTRO PHYSIOLOGICAL RESEARCHES AND ELECTROTHERAPEUTICS SINCE THE DISCOVERY OF THE VOLTAIC PILE.

GALVANI discovered, in 1790, that in arming the muscles and nerves of a frog suitably prepared, with two pieces of different metals (one alone of which was oxidizable, as has been since discovered) their simple contact sufficed to produce muscular contractions. This original experiment was the starting point in the discovery of the voltaic pile.

Galvani's opinion was, that every animal possessed a certain amount of electricity which was secreted in the brain and resided in the nerves which transmitted it to every part of the body. Its common reservoir was the muscles, every fibre of which was to be considered as having two surfaces, upon each of which, the one or the other of the two sorts of electricity was found. He then compared the muscles to a small Leyden jar of which the nerves were the conductors. He believed that the electrical fluid was drawn from the interior of the muscles in the nerves, and from them to the exterior of the muscle where an electrical discharge resulted, to which a muscular contraction corresponded. We only mention the theory, because it was the starting point for the physicians who at this period engaged in the study of galvanism. As soon as it was published a controversy arose between Galvani and Volta. The last mentioned proved that the electricity produced by the contact of the two metals

(that is to say, by the oxidation of the zinc) was the cause of the muscular contraction. For a time it was believed that Galvani was worsted in the controversy, when, aided by his nephew Aldini, he proved that the metallic circuit was not necessary for the exciting of the muscular contractions, for they still obtained them in a frog recently prepared, by bringing the crural muscles into contact with the lumbar nerves. Volta replied that this fact was only a generalization from his principle, according to which, all bodies always became sufficiently good conductors by their mutual contact when in the two opposite electrical conditions. But Volta was mistaken. Galvani conjointly with Aldini, had just discovered the proper current in the frog, and of which Nobili, Marianini, Matteucci and du Bois Reymond made such a profound study. This discovery, without doubt, is one of the most important that has been made in electro-physiology, for if we should ever discover the relations that electricity bears in the phenomena of life, this discovery, of Galvani's, would, perhaps, be the starting point for researches in such a direction.

This discovery aroused the School of Medicine of Paris, who named a commission to report all the experiments that had been made in galvanism subsequent to the year 1790.

This commission ascertained that electricity from the pile penetrated the nerves and muscular organs deeper than that from ordinary electrical machines, and that it excited sharp contractions and strong sensations of tingling and burning in parts whose dis-

eased condition sometimes made them insensible to ordinary electrical sparks and shocks.

The National Institute, awakened by the general movement which the study of the effects of galvanism produced, appointed, in 1799, a commission composed of Coulomb, Sabatier, Pelletan, Charles, Fourcroy, Vauquelin, Guyton and Hallé to examine into and verify the galvanic phenomena. This commission, composed of the most eminent men of the day, established a distinction between electricity and galvanism; they believed that they saw in the animal organism a principle in which resided the essence of the mutual relations of the nervous and muscular system. The arc or circuit in the animal could be formed with nerves and muscles contiguous to each other as Galvani had discovered. This arc is not interrupted by the division or ligature of a nerve, provided that the parts ligated or divided are in contact with those in the muscular action. It is not so in the living animal, inasmuch as the division or ligation of the nerve was sufficient to cause a loss of the power of motion in the muscle to which the nerve was distributed. They recognized the fact that the galvanic influence appeared to be aroused by exercise and to recover itself by repose. Here was mentioned for the first time the result of the action of the continued current upon a nerve.

The commission recommended, and with reason too, in order to secure exactness in the appreciation of experiments, that observers should previously assure themselves of the health of the animal experimented on, and of the manner in which it had been kept

and supported up to the time of the experiments—a wise recommendation to which experimenters have not always paid attention.

We can give no idea of all the experiments that were made at this period and which led to some results that perhaps we have in a measure forgotten. We will cite only two.

Wilson Philip, having cut the eighth pair of nerves in a rabbit, found, on uniting the two extremities by a metallic band and causing a current to pass through the nerve, that digestion and respiration, which were performed with great difficulty, were carried on with much more ease as soon as the pile was set in action.

Dr. Andrew Ure experimented, with a battery composed of a large number of strongly charged cells, upon the body of a criminal, immediately after execution; one of the poles being placed in contact with the spinal marrow and the other on the sciatic nerve, all the muscles of the body were instantaneously thrown into convulsive movements. He succeeded in imitating, to a certain extent, the movement of the lungs; he caused the fingers to move with rapidity by passing a current from the spinal marrow over the ulnar nerve, and by sending a current from one ear to the other (having first moistened them with salt-water) the muscles of the face were thrown into horrible contractions, the movements of the eyelids being especially marked. This is the first instance of localized electrification as it is employed to-day, a method which was formularized, in 1834, by M. Mason, pupil and friend of our celebrated colleague, Savart, viz:

“The property of the induced current of affecting only the points touched allows us to limit its action to any part of the body. Thus when two metallic discs, connected with the current, are placed upon the end of a finger, the current passes through the finger only. Already we perceive the immense importance of this discovery for those who are engaged in applying electricity to practical medicine.”

Let us now pass to the application of the voltaic electricity to therapeutics.

Pfaff applied it for paralysis of the optic nerve, as Magendie has since done with some success, when the paralysis is incomplete. It was used to advantage in paralysis of the extremities, weakness of sight, and in gutta serena due solely to inexcitability of the optic nerve, in deafness dependent on nervous weakness, in hoarseness and aphonia, and in paralysis of the sphincters of the rectum and bladder. Many other applications were made which show that the practitioners followed in the same track as their ancestors. Did they achieve more or less success than these last? The recorded statistics are wanting to answer this question.

Dr. Fabre-Palaprat, still later, obtained very decided effects from the voltaic current broken at greater or lesser intervals, in cases where there was atony or weakness in the play of the organs, provided there was no positive lesion or inflammation, and also in some cases of lymphatic engorgements.

Before showing the results attained by eminent physiologists, who have furnished the materials by

the aid of which we at present apply electricity to therapeutics more methodically than in the past, let us pause for a moment to recall the facts which we must bear in mind, if we would compare the physiological effects of electricity with the results of mechanical, physical, chemical or vital actions.

Animals have some parts of the body that are excitable, some sensitive, and some destitute of these qualities. Haller, whom we always find assiduously engaged in physiological experiments, denuded the parts and tested them with the knife, with acids, or other chemical agents, in order to ascertain the special property of each. He thus found the parts which were capable of excitation and those which only gave evidence of pain in irritating a nerve or any of its branches in a muscle, there resulted a sudden, rapid movement; when a nerve corresponding to a muscle was very powerfully and for a long time irritated, the power of contraction was lost. If the nerve was divided and irritated below the point of section, the animal evinced no sensation, but the muscle immediately contracted. If the irritation was applied above the section, the reverse effect took place. Electricity almost always produced similar results.

The ligature of a nerve arrested the action of the current, as did other stimulants; only it must be applied very slightly. In such a case, when the ligature was detached, irritating the nerve above no longer excited contractions.

M. Matteucci has shown that poisons do not act upon all in the same manner, and that when an animal

is killed by an electric shock, the susceptibility of the nerve to the action of the current is lost. This observation should be borne in mind for the reason that it shows the danger of too strongly exciting the nerves.

About twenty-five years since, (in 1841) our colleague M. Longet, in a memoir *couronné* by this Academy, demonstrated from experiments the independence of muscular irritability and the excitability of the motor nerves. This important fact has since been confirmed by M. Cl. Bernard, in his experiments with woorari. He in fact ascertained that the muscles may remain in a contractile state even when their motor nerves are no longer excitable. The electrical current appeared to be the only one of all the excitants employed that could produce contraction in muscles without the intervention of nervous filaments. This fact is very remarkable, for the reason that it seems to establish an analogy between electrical currents and the nervous force in producing muscular contractions.

We have seen previously that a nerve, when too long irritated, loses its power of causing a contraction in its corresponding muscle, and this power is recovered by rest. It is the same when a current which comes from a given number of pairs (voltaic cells) has circulated for a certain time between the muscle and the nerves; the animal manifests no muscular contractions either in opening or closing the circuit, but if we only change the direction of the current, the muscular movements are again manifested. By changing the direction of the current a certain number of

times we can either destroy, or at will restore, the muscular excitability in the frog. It is in this that the so-called voltaic alternations consist. But if the muscles of a frog that have been for a certain time subjected to the influence of one current of fixed intensity, lose their contractile power, they will nevertheless exhibit contractions when exposed to a still stronger current.

The muscles of a frog which have lost their contractile power by the prolonged passage of a voltaic current, recover this power by rest. It is the same in the living animal, but we must take into consideration the will of the animal, which can influence these effects even so far as almost entirely to counteract them, especially if the current be weak and if the animal have a strong degree of vitality.

Marianini and other physicists have observed that if the current be passed into a nerve in the direction of its filaments—that is to say, from the head towards the extremities—a contraction results in closing the circuit, but none in breaking it. If the current travels in the opposite direction there are no contractions in closing the circuits—they are manifested only in breaking it. There is absence of contraction when a nerve is diseased, in its length, as M. Matteucci has shown.

Marianini found among other things, that the current produced, according to its direction, either contractions or painful sensations in the frog as well as in other animals. When the current is direct—*i. e.*, passing from the head towards the extremities—we have a brisk contraction of the lower limbs, at the moment of

closing the circuit. Upon opening the circuit the contraction is more feeble, the spinal cord writhes and the animal gives evidence of having received a violent shock and sometimes even cries out. It would appear, then, that the nerves are organized in such a way, as to transmit movements in the direction of their filaments, movements which are transmitted only with difficulty in the opposite directions and from which there results painful sensations.

Nobili succeeded in causing tetanus in a frog by rapidly breaking and closing the circuit. This effect was probably due to a change in the condition of the nerve which passed rapidly from a natural to an artificial state and *vice versa*. We then ask whether the tetanus which is natural in man and other animals might not arise from the changes similar to those following acute pains. If it were so we should be able to cause it to cease by taking advantage of the fact observed by Nobili that frogs affected with tetanus remain in this condition under the influence of a current of certain intensity, and yet often-times they are completely relaxed by the action of currents directed inversely; some experiments made upon this point have already given satisfactory results.

The existence of a current peculiar to animals, as we have seen previously, was pointed out and made evident for the first time by Galvani; it has been subsequently studied in turn by Nobili, Matteucci, and du Bois Reymond. Each of these had a share in the analysis of this important discovery by the aid of which we have proved that the nerves and muscles

are electro-motors, that is to say they are so constituted as to produce currents when they form a closed circuit. These electro-motors probably play a part in the phenomena of life that is still unknown, so far as their organization enables us to judge.

Nobili ascertained that the contraction produced by the contact of the crural muscle and the lumbar nerve was due to an electric current—the existence of which he determined and which passed from the extremities towards the head;—the nerve is therefore negative. M. Matteucci has determined this fact with a living frog; he has shown that the current which is peculiar to the frog does not become lessened in allowing it to pass in circuit through this living voltaic pile, of which we shall speak presently. From this he has concluded that the extremities of the animal are not polarized in any appreciable degree. This is an important observation, for if it were otherwise we could not conceive how the muscles and nerves could act as electro-motors in vital phenomena; nevertheless they do so act for the reason that their polarization would produce an inverse current, the action of which is each moment weakened.

M. Matteucci subsequently ascertained that the muscles are the electro-motors, inasmuch as we can obtain a current by placing the interior of a muscular mass in communication with the exterior; the current passes from the interior to the surface. Nobili obtained a still stronger current by forming a voltaic pile of cups, each of the elements of which were composed of the thigh and its corresponding nerve.

M. Matteucci having placed the nerve of one frog (prepared in the way directed by Galvani, *i. e.*, the lumbar nerve still having attached to it a shred of the crural muscle) upon the muscle of another frog, noticed that the first (the nerve) was excited at the moment when he caused the second (the muscle) to contract mechanically. We can therefore conclude from this that the contraction of the muscle produces an electric current, which reacts upon the galvanoscopic frog. M. du Bois Reymond having noticed this phenomena, has deduced the following conclusions.

The transverse section of a muscle is negative; the longitudinal section positive; nerves having no transverse section are natural, they must be cut before producing a current. These laws apply to the ultimate constituent elements of the muscles and nerves. The electro-motor power ceases after death when the muscles and nerves have lost the property of irritability.

We find a sudden and marked diminution in the current of a muscle at the moment of contraction; and of a nerve when it transmits either a movement or a sensation.

There is a difference between the muscle and the nerve in electrical relations. When a continuous current is passed over a portion of a nerve lengthwise the effect of the current proper is either increased or diminished, according to the direction of the current. This condition of things cannot obtain in the muscle.

Motor and sensory nerves comport themselves alike in this respect.

The researches of Jean Müller and M. Longet upon the employment of electricity to distinguish motor and sensory nerves should be mentioned here, on account of their importance in electro-therapy. Longet has also made some profound researches upon the nerves of special sensibility ; these studies are of great interest, and we recommend them to the attention of physiologists. Nor ought we to omit speaking of the curious experiments of M. Helmholtz, relating to the duration of the phenomena of muscular contraction, and of the transmission and excitation of the nervous influence. By the aid of certain ingenious apparatus and methods he was enabled to ascertain that the rapidity of the transmission of a nervous impulse in the sciatic nerves, was about at the rate of thirty metres (about ninety-eight feet) per second. Chilling the nerve very markedly diminishes this rate of transmission.

PART III.

THE RESULTS OBTAINED BY THE VARIOUS COMPETITORS FOR THE PRIZE.

HAVING detailed the electro-physiological phenomena produced by voltaic-electricity, we will now, in order not to lose sight of the therapeutical applications, speak of the results obtained in these applications by the competitors, M. Duchenne (de Boulogne), Namias, Tripier, Poggioli, Scoutetten, Ciniselli, and Pitet. We also add here the results arrived at by M. Remak (who died a short time since), in order to bring at

once into comparison all the results; but in order to make them of service, let us first sum up in a few words the facts which have previously been ascertained, and of which we have already spoken.

It was generally recognized among the earlier physicians who devoted themselves to electro-therapeutics, that the electrical treatment had in view the stimulation of those organs which were only functionally deranged, and in which life was not destroyed, so as little by little to restore them to their natural function. It seemed to follow from their observations, that the medical employment of electricity was indicated in the three following classes of cases. 1st. When the question was to re-establish contractility in muscles deprived of this power, when the loss of contractility did not depend entirely upon cerebro-spinal lesions. 2d. When the question was to re-establish general sensibility or special sensibility of the organs of sense, this sensibility being either abolished or merely diminished. 3d. When it was necessary to restore to a normal condition, either contractility or sensibility which had become exaggerated or perverted. Have practical physicians obtained different results with their new apparatus? It is doubtful.

M. Duchenne (de Boulogne) employed the method of localized electrization pointed out by M. Masson, but improved, generalized, and made practicable by himself. His plan of operation is as follows: We take the electrodes either dry or moist, by the aid of which we can at will either concentrate the action of the electricity upon the skin, or cause it to pass through the

skin, and limit its action to the organs situated beneath, be they nerves, muscles, or bone; and when the epidermis is very thick the electrical discharge does not pass through the dermis, and produces only sparks or a peculiar crepitation without giving rise to any physiological phenomena. If we place upon two points of the skin two rheophores (electrodes), one of which is moist and the other dry, at the point where the last is placed, there is experienced a sensation confined to the skin. In this case, according to M. Duchenne, the re-composition of the two electricities is effected in the dry portion of the epidermis after having passed through the skin by the aid of the moist rheophore (electrode).

By moistening very slightly the skin at the points where the epidermis is very thick, there is produced over the whole track of the rheophore (electrode) a superficial sensation comparatively stronger than the preceding, and without sparks or crepitation. If the skin and the rheophores are very moist, we no longer notice either sparks, crepitations, or sensations of burning; but we have manifested various phenomena of contractility or sensibility according as the part acted upon is a muscle, a nerve, or a bony surface; in the last instance it produces a sharp pain of peculiar character; therefore we ought to avoid placing the rheophores upon a bony surface. He draws from these facts the conclusion that by the induced currents we may confine at will the electrical action to the skin—that without either incision or puncture we are able to cause the current to pass through the skin, and

limit its action to the organs which the skin covers—*i. e.*, muscles and nerves as well as bones.

M. Duchenne has applied his process, employing successively the electricity from the machine, from the Leyden jar, from the voltaic pile, and from the induction apparatus, as being best suited to electrization of the muscles, the last being essentially medical. It is in this way that he has succeeded in causing muscles, and even their fasciculi to contract singly.

Here, then, are the results which he obtained : 1st. He regards as completely demonstrated the utility of the electrical treatment when applied to consecutive paralysis, to traumatic lesion of the nerves, and to infantile paralysis. He advances the idea that at the commencement of these diseases we can ascertain the degree of the lesion by the aid of the electrical contractility and sensibility produced in the paralyzed muscles.

2d. Electricity is equally applied, but with a less degree of certainty, to the paralysis called spinal, to rheumatic hysteria and essential paralyses, whether they are local or more or less general; but, as these affections may spontaneously cure themselves or temporarily disappear, we cannot judge of the real value of the electrical treatment.

3d. Neuralgias, in general, with the exception of the facial variety, are cured by electro-cutaneous excitation.

4th. Rheumatoid muscular pains are rapidly cured by the electrical treatment.

5th. Cutaneous or muscular hyperæsthesia, and cutaneous anæsthesia whether hysterical or from lead

poisoning, are happily affected by electro-cutaneous excitation.

6th. Certain neuroses (among them, *angina-pectoris*) are cured by the same means.

7th. According to his statement, he has treated with success local affections like paralysis of the 7th, 3d and 6th pairs, aphonia, deafness, paralysis of the bladder, and some cases of strangulation of the intestines.

8th. The application of electricity to the treatment of chorea, scriveners-palsy, gout and amaurosis has only produced results that are almost entirely negative.

M. Namias ordinarily employed a pile of cups formed of 200 elements charged with saline water. The force of this pile diminished rapidly, so that he replaced it by another, and this by a third, in order to give time to the couples to depolarize themselves; this is the infancy of the voltaic pile. He asserts that by their use he has ascertained that we may avoid the calorific and other effects which invariably result from the use of the piles of continued currents in use at the present time. The following are his results:

1st. Intermitting currents leave no lasting impression on living bodies. Moderate shocks keep in practice the muscles and nerves, and are not unfavorable to vital reaction. Affluence of the blood and increased nutrition follow repeated shocks.

2d. If the shocks are very powerful, though not up to the degree necessary to cause death in the animal, they leave no bad results.

3d. Currents too long continued may produce disease.

4th. He has recognized the influence of the direc-

tion of the current upon the nerves of man, an influence which he had believed of no account.

5th. He has ascertained the cases of paralysis where the cure is complete and those where there was only an amelioration, by means of the intermittent currents which are preferable to the others. He employs the centrifugal currents in paralysis of motion, and the centripetal in paralysis of sensation.

6th. In neuralgias or the neuroses there is no fixed rule, sometimes it is necessary to employ the intermitting, sometimes the constant current, in one or the other direction.

7th. In affections of the vascular and lymphatic systems, the constant currents are necessary, and the intermitting in affections of the nervous and muscular system.

8th. According to his showing, he has demonstrated that we must consider as erroneous the employment of electro-muscular contracity to discover the seat and nature of paralysis.

M. Poggioli, relying upon Franklin's theory, made use exclusively of statical electricity in the treatment of diseases, just as it was administered before the discovery of the voltaic pile. He recommends, especially, electrified water for drinking, and the electrical bath.

M. Tripier has presented a "*Treatise upon Electro-Therapeutics*," in which he passes in review all the methods that have been employed and the results obtained and which he endeavors to explain by theory. He considers as original:

1st. His considerations upon the action of induced currents according to their direction and intensity.

2d. The employment of different kinds of excitators, especially of charcoal.

3d. The surgical indications for the use of the chemical galvano-caustic which he has applied to different pathological conditions.

4th. The explanation of anæsthesia.

5th. The experiments upon the sense of taste as excited by the direct or indirect galvanization of the tongue.

6th. The cure of a certain number of diseases.

7th. The treatment of hyperplasies of cellular tissue of contractile organs, especially the uterus, prostate, &c.

M. Scoutetten has presented, in competition, a work entitled "*Of Electricity considered as the Principal Cause of the action of Mineral Waters on the System.*" In this work, from this point of view, he considers :

1st. The electrical action of mineral waters upon the exterior and the interior of the human body, according as the waters are taken in the form of drink or a bath.

2d. Of the electricity of the blood of man and other living animals, and of the re-electrization of mineral waters that have been transported to a distance. Independently of this work, M. Scoutetten has presented special memoirs in which he has developed the various questions out of which he has made a system of doctrine.

M. Ciniselli has presented a little work where we find laid down a *résumé* of his studies upon the chemical galvano-cautery (a method pointed out some

thirty years since by one of your commissioners) and which he, in connection with M. Breschet, has applied at the Hôtel Dieu of Paris.

We make a distinction between the chemical galvano-cautery and the calorific galvano-cautery, in this, viz., that the last cauterizes by the aid of heat produced in a metallic wire by an electrical current of a certain intensity passing through it, while the former effects the cauterization by the aid of an acid or an alkali which is separated from a solution by the chemical action of the current. It produces this effect whether there be a simple circuit or a circuit in which the pile is used. According to the direction of the current it carries to the diseased part a caustic acid or alkali in a nascent state, and therefore endowed with immense power. M. Ciniselli enumerates in his little work the cases where he has obtained cures in operating upon tumors of different sorts and of varied pathological conditions. By means of a similar method M. Nélaton has removed naso-pharyngeal tumors. We cannot but congratulate M. Ciniselli on his researches concerning the application of electro-chemistry to therapeutics, and therefore your commission has felt bound to recommend the prosecution of this line of work.

M. le Dr. Pitet has devoted himself to establishing a parallel between the physiological and pathological effects produced by the interrupted and the continuous currents, and to show the superiority of the therapeutical action of the weaker over the stronger induced currents. Among other things he has arrived at this conclusion that the best mode of application is that

of the continuous currents. These are in brief the results of his studies.

The induced and the continued currents produce effects essentially different from each other: the first tend constantly to produce a state opposite to that which exists at the moment of their application, that is to say, that their proper initial effect being constantly the same as the pathological state which they would counteract, it follows that their therapeutical effect is the contrary of the first. The continuous currents, on the other hand, produce in the part affected the same effect that they produce in the healthy state *i. e.*, relaxation, dilatation, &c. According to his observations, strong induced currents applied in the healthy state as in the diseased state, fatigue the patients and oftentimes aggravate the morbid conditions; they alter and counteract the sensory and motor irritability, while the continuous currents on the other hand are easily tolerated by the organism; they are employed with advantage upon congested vessels, and their influence is such that serious consideration should be given to them in therapeutics. M. Pitet reports a certain number of facts which he considers as demonstrating the principles which we have just pointed out.

We cannot but approve of the author's plan of studying the physiological action of electricity successively upon an organ in a healthy condition and the same organ in a diseased condition. It is the only plan by which we can arrive at a knowledge of the real action of electricity in therapeutics.

♦

M. Remak, of Berlin, used Voltaic piles with the constant currents and also those which did not possess this property. The following are the results of his experiments :

1st. The continuous current, up to a supportable degree, acts upon the central organs, and, by reflex action, produces contractions, etc., in the antagonistic group of muscles. 2nd. Continuous currents increase, within certain limits, the excitability of a nerve instead of weakening it, and this it does both in the motor and sensory nerves. 3d. He has effected the resolution of paralytic contractions by the aid of the continuous current. This is the plan which, under favorable circumstances, cures paralysis, for which treatment by the interrupted current has only proved injurious. 4th. He has equally well cured inveterate paralysis. 5th. He has applied it to patients affected with contractions of the joints and rheumatic pains ; having caused a current from a battery of fifteen or twenty elements, charged with sulphate of copper, to pass for about five minutes through the muscles of the shoulder, the patient raised his arm and placed it on his head. 6th. He then endeavored without success, however, to ascertain whether the continuous current of a certain force was not of such a nature as to produce disease in the organism. The employment of the interrupted current with him has succeeded only in some special cases and these by no means frequent.

If we now compare, at a glance, the results which we have just pointed out, we see that physicians do

not agree either upon the plan of treatment or the results. In a word, M. Duchenne employs, with success, interrupted currents in the majority of cases, a treatment which Remak rejects as injurious, and gives preference to the continued current. M. Namias claims to have shown that the diagnostic use of electricity by Duchenne in discovering the seat of paralysis is false. This last does not admit the hypo-anæsthesiant properties of the continuous currents in man. M. Remak, and in a measure M. Pitet, advance the idea that within certain limits continuous currents increase instead of weakening the excitability of a nerve; it is this property which has led to their employment in the treatment of paralysis in preference to the induction current. We will also add that M. Hiffelsheim considered, the intermittent current as an excitant and the continued current as a calmant.

We will observe that the hyposthenic action of the continued current appears to be pretty generally recognized and that physiologists admit that with weak currents passed repeatedly in opposite directions we have only a very feeble hyposthenic action, while this action may become predominant when the currents are very strong.

These differences, and still others which we might cite, in the results obtained and in the opinions put forward upon the value of this or that method of procedure, show the impossibility of as yet pronouncing, positively, upon the actual therapeutic properties of electricity according as we employ the continued or the interrupted current, and especially is this the case when we have not followed up the treatment.

One of two things—either electricity acts efficaciously or its action is nil. In the first supposition, we must then conclude that physicians have not employed it under the same conditions of age, constitution and vital force, nor in the same degree of disease or with apparatus of a like intensity, for, if everything had been similar on all sides, there is no reason why the same results should not have been obtained. In the second supposition we must admit that nature accomplishes all the work. We are compelled to believe that the treatment has not always been applied to the same conditions, for, we will not deny that the electricity does act efficaciously in certain kinds of paralysis and other pathological conditions, in proof of which there are, already, numerous examples of long standing.

PART IV.

OBSERVATIONS AND CONCLUSIONS.

WE beg leave to present to the Académie some observations which will not be without value in the therapeutical application of electricity.

The continued and the interrupted currents have each their own mode of action; the first, by the aid of moistened electrodes, penetrate through the skin into the organs underneath and produce there physical, chemical, calorific and, possibly, other very decided effects; effects which depend upon the intensity of the currents and the conducting power of the parts which they pass through. These parts are the muscles, nerves, organic elements, the vessels, all the tissues, &c.

among which the current distributes itself according to their conductibility; they do not form a homogenous whole like a metallic conductor. There are the anastomoses and branchings (of the parts) and the contacts more or less immediate from which result resistances; light shocks, when the conductors are charged, which, however, are only slightly perceived; the special action upon the muscles and nerves of which we have already spoken; the calorific effects produced by the resistance to the passage of the electricity; possibly chemical effects due to changes in the conductors. Have all these effects, which are interesting in study, been analyzed in the electrophysiological researches upon animals? The effects of heat may be studied with great precision by the aid of the thermo-electric needles; we have not, as yet, determined the chemical effects.

Do we not know, among other things, that a thread of metal, which is a poor conductor, as, viz.: platina, becomes shortened when traversed by a current of intense power? Who can say that similar effects may not manifest themselves in the nervous and muscular filaments in the capillaries, &c.? All these effects may exercise an influence on the organic functions; these are the studies to be made. We must then (following the example of M. Namias in his electrophysiological experiments upon animals) in order to make an application of this agent to man, ascertain, after death, what have been the effects exercised upon the various organs according as we have employed either the continued or the intermitting currents of given intensities.

The intermitting currents, independently of their physiological effects, already mentioned, produce some degree of heat during the successive discharges, of which we have a proof in discharging a Leyden jar through a fine metallic wire; they also produce expansion, as is seen in the bursting into fragments of a delicate glass tube, of small diameter, by the passage through it of a discharge from the Leyden jar. These are, then, the questions to examine, when we desire to treat the question scientifically in seeking after the therapeutical effect of electricity. We see from this how complex is its action upon the various organs.

When we take a survey of the general considerations which precede the memoirs and works laid before the commission, it is easy to convince ourselves that the experimenters do not form any just ideas of the disengagement of the electricity from the apparatus which they make use of. These apparatus consist of ordinary electrical machines, Voltaic piles with the continued current, electro-magnetic and magneto-electric apparatus of every form and arrangement.

Nor do they, any better, give a good account of the effect resulting from electricity set free in chemical actions. Electricity, whatever may be its source, is always of the same nature; when generated from different sources it differs only in its tension, quantity, and the duration of its passage. In the Voltaic pile the tension is in general weak at the two poles, but it produces powerful physical effects by reason of the quantity of electricity which passes into the circuit when it is closed.

On the other hand, when we close the circuit of a pile with a metallic wire, the electrical current, which passes through this wire, produces in it by induction another current (extra current) which travels in the inverse direction. This current, whose duration is very brief, and which, indeed, may be considered almost instantaneous, tends to diminish the intensity of the inducing current at the instant only of the closing of the circuit. When the circuit is opened, there is produced another current which follows the direction of the inducing current and which has the character of the discharges from the Leyden jar.

Induced currents produced by the Voltaic current or by magnets placed at a distance in the wires, differ among themselves in intensity according to the force of the pile, and that of the magnets, and the length of the wires. They have a particular character, because in the discharges there are two currents instantaneously directed in opposite directions and acting as reciprocating currents.

The electro-magnetic or magneto-electric apparatus should be constructed only with the view of facilitating the application of electricity by the intermitting current. The effects which they produce differ only in the intensity of the discharges. It is possible, also, to obtain similar effects with Leyden jars that are discharged and recharged with more or less rapidity. The special effects pertaining to special instruments are then determined only by the circumstances of intensity, duration, and rapidity of discharges.

Nor have we been given a good account, in general,

of the physiological effects which may be produced by electricity set free by the contact of liquids in organized bodies. When two different liquids, conductors of electricity, are in contact they always put themselves into the two different electrical states whether they produce a chemical reaction upon each other or whether they be only in simple mixture. The one which comports itself as an acid sets free the positive electricity, the other the negative. These two electricities remain in the static condition so long as the liquids do not make a closed circuit by a solid non-permeable conducting body.

In the static condition the tension of electricity is so weak that it must be an exceedingly sensitive apparatus which can detect it. Moreover, there is a recombination of the two electricities in proportion as they are set free on the surfaces in contact, so long as the chemical reaction or the mixture lasts. We see, then, how this electricity might exercise an action upon the internal organs, especially in the administration of mineral waters. If these waters are alkaline in reacting upon the acid secretions which cover the skin, they take on a negative electricity and the secretion becomes positive. The recombination of the two sorts of electricity is effected on the skin, and the internal organs cannot, therefore, experience any effect.

In the second case, when the circuit is closed by a metal, without doubt there are electro-chemical effects produced. But do conductors, adapted for primary closed circuits exist in the organs of man and other

animals? What are the solid, conducting, non-permeable parts which could induce the circulation of electricity, set free by the contact of liquids, during their simple mixture or chemical reaction? We do not know, for there are only the tissues which separate the liquids, and through the medium of which their reaction takes place. Deprive them of their liquids and they are no longer conductors.

It is not sufficient to base a physiological theory upon an original fact; we must commence by demonstrating the fact. At present, at all events, the existence of electrical currents in the organs of living beings—man—currents that are due solely to the reaction of the fluids, independently of the employment of metallic conductors, is no way proved.

To sum up, then, we see that from the time of Ancient Greeks down to the discovery of the Leyden jar, the discharges from the torpedo were employed in the treatment of paralysis and other diseases, just as at the present we employ electrical apparatus. From the time of this discovery to those of Galvani and Volta, numerous applications were made of electricity to therapeutics, but ascertained electro-physiological facts were not taken as a guide. It is, really, only since this last epoch that electro-physiological experiments have been followed with ardor, and the results of these experiments are now beginning to furnish sure principles for their applications.

Subsequently there came eminent physiologists who discovered the electrical and electro-physiological properties of the muscles and nerves, and then the appli-

cations of electricity became more rational and more methodical.

The discovery of induction, permits only the construction of apparatus which shall facilitate in a remarkable degree the employment of the intermitting current. Thus it is that electro-therapy has become common in medicine.

But still we have not yet fixed upon the best mode of treatment to be employed in this or that morbid condition, inasmuch as one rejects as injurious what another regards as alone efficacious. The commission which has not followed up the various treatments, must then remain in doubt in this respect until these discrepancies are adjusted. And it is with the purpose of accomplishing this adjustment that they propose to the Académie to remit the prize for a period of three years, in the hope that within that time new experiments may demonstrate the preference which should be given to this or that plan, with the certainty of obtaining either complete cures or sensible amendment in definite pathological conditions, and with an equally defined intensity of current, either continued or intermitting. Then will electro-therapy form a body of scientific doctrine to which the Académie can give its highest approbation.

Further, it is more important to do this at this particular epoch, when medical science is striving, by the introduction of the physico-chemical sciences, to acquire that degree of positiveness which characterizes these last, and we must ask of the physicians, who apply electricity in therapeutics, to adopt this view which opens up to them a field of important discoveries.

REVIEWS.

*The Psychology of Celibacy.*¹

IN the course of a review published in the last number of this Journal, we remarked that "a treatise which takes up any subject, considers it intelligently, and follows it through all the various phases which the ever-changing social and political conditions of man impress upon it, must, of necessity, be valuable and interesting." To no work which has come under our notice is this language more truly applicable than to the admirable history of Mr. Lea. In fullness and exactness of detail, in its conscientious citation of authorities, in the impartiality with which all possible sources of information have been searched, in learning and scholarly finish, it is absolutely unapproached by any similar treatise which has issued from the American press. Indeed, the number of foreign historical works which have equalled it in these particulars might be readily counted on the fingers.

We have felt it to be our duty, as it certainly has been our pleasure, to express, at the outset of this review, the opinion which we have formed of Mr. Lea's labors, after a very careful perusal of his volume. The course of our remarks will not lead us to the discussion of the subject of sacerdotal celibacy in all its various relations to society, and we may not, therefore, have the opportunity of again referring specifically to the treatise which we have taken as the text of what we have to say, and which is so highly creditable to the ability, the industry, and the power of research possessed by its author.

Neither do we propose to enter into the consideration of the advantages or disadvantages of celibacy, as influencing the duties and operations of mankind in general. This would be a most interesting subject of investigation, but would require for its full consideration far more time and space than we have at our command.

Our purpose is much more limited, but, we believe, not less important. We design to consider celibacy as it affects the minds of men and women—to show the good which, under some circumstances, it is capable of accomplishing, and the evils which, in others, so certainly accompany its practice. Even with this somewhat restricted object in view we shall scarcely be able to do more than indicate certain broad features of the subject.

Undoubtedly celibacy is of religious origin, and dates back to a period far anterior to the Christian era. The Buddhists practised it at least six centuries before Christ, and it was probably in vogue throughout India at a much

¹ An Historical Sketch of Sacerdotal Celibacy in the Christian Church. By Henry C. Lea. Philadelphia: J. B. Lippincott & Co., 1867.

earlier day. Pythagoras is said to have introduced the custom into Greece after his return from Egypt, and to have enjoined it upon his disciples, who lived together very much in the same manner as did the monks of subsequent times. So fearful were some of his followers of not being able to lead an entirely chaste life that they purposely placed themselves in such a condition as to destroy both the sexual appetite and the power of indulgence. Among the priestesses of Egypt, Greece and Rome, not only celibacy, but absolute continence was strictly required.

The introduction of celibacy into the Christian Church was, therefore, a very simple matter. The priesthood was, in a great measure, prepared for it; and in the earlier days of Christianity there were many reasons why those whose duty it was to administer the ordinances of religion should not be burthened with the cares and responsibilities of families. By thus leading to a concentration of thoughts and energies to one point—the increase and glory of the Church—results were obtained which would scarcely have been possible if there had been a divided love or interest on the part of those who were struggling to plant the seeds of a new faith in a most refractory and incorrigible soil.

But with the establishment of the Church the necessity for the celibacy of the clergy in a great measure ceased, if it was not altogether rendered useless. For those communities of men and women bound to seclusion and perpetual continence there never was any apology. Their history is one long series of broken vows, licentiousness, and mental and nervous aberrations, with scarcely a redeeming feature which is not utterly selfish in its character.

The obligations of man are two-fold—those which he owes to himself, and those which are due to his fellows; and though he generally endeavors to benefit himself directly, and to perform his duties to his neighbors incidentally, he has no right to seek his own gratification altogether, regardless of the effects produced upon society at large. Should he make the attempt upon a scale of such magnitude as to interfere with the happiness or progress of others, an end would very soon be put to his operations. The doctrine of “the greatest good to the greatest number” would be enforced with a merciless rigor, from which there would be no appeal. It is impossible, therefore, that celibacy can ever become a prominent feature of either civilized or uncivilized society. The natural instinct of mankind is against it—savage people do not even know of such a thing, and enlightened nations talk seriously, every now and then, of taxing celibates, as did several nations of antiquity.

But that there is a growing disposition among the male portion of the human family to avoid marriage, and to contract irregular and immoral relations with women is, we think, indubitable. In America this evil is less prevalent than in Europe, where in some countries to keep a mistress is the rule, and to marry a wife the exception. Still, even with us, especially in the larger cities, illicit connections are on the increase, and, as we become

more cosmopolitan in our ideas and modes of life, the practice will certainly be more and more extensively followed.

Every intelligent physician recognizes the evils of absolute continence. They are much greater with men than with women; for the latter not only are not possessed of such strong sexual desires as the former, but are endowed with a degree of natural modesty and quiet control which prevents the emotional disturbance and physical ills which might otherwise result from entire abstinence. But even in chaste and retiring women, whose minds never, perhaps, conceived an impure thought, mental and bodily diseases ensue from their failure to fulfil the entire duties of humanity. The laws of society are so arranged that women, unless they are monarchs, cannot with propriety take the initiative in entering upon the marriage relation. Celibacy is, therefore, forced upon many against their wills. That this is an evil is very evident; but how it may be remedied without breaking down some of the most charming characteristics of femininity is difficult to determine.

With men, however, the case is very different. If they eschew matrimony it is from choice. They do not under-rate the extent of the probable injury to health from continence; indeed many, as we know from observation and experience, indulge in sexual intercourse as much from a desire to preserve their health, as for the gratification of any merely animal passion. Perhaps, so far as the avoidance of any absolute physical or mental disease is concerned, sexual intercourse, whether committed with a wife or a harlot, if indulged in with moderation, will answer every end. But, in still higher relations the chasteness of marriage and the unchasteness of harlotry are two very different things. As regards these, the latter can never take the place of the former; and so far, therefore, as they are concerned, we may regard the man who enters into illicit sexual associations, and abstains from marriage, as occupying the same ground as one who practises absolute continence.

The title, therefore, which we have prefixed to this essay expresses exactly the scope which we intend our remarks to take. We desire to show the influence which celibacy exercises over the mind, and to indicate, to some extent, the reciprocal effects which the marriage relation produces upon the mental organizations of those who undertake its responsibilities.

The first question we propose to consider is:

Does celibacy increase the tendency to insanity?

Authorities are very generally agreed that it does, although it is extremely difficult to arrive at any great degree of exactitude in the matter, for no data are really more unreliable than statistics as ordinarily collected. With reference to the point in question, it is commonly stated by the best authorities, that there are more insane among single persons than among those who are married. In general terms this is doubtless the case; but unless we

know the proportion which the unmarried bear to the married, it is of no importance for us to know that insanity is more prevalent among the former than the latter.

From some countries, however, we have tolerably reliable evidence on the subject. Thus Marcé,¹ after stating that celibacy exercises a positive influence in the development of insanity, for the reasons that it favors an irregular life and leaves the individual without the moral support of society says the statistics of the insane in France during a series of ten years, show that of 100 lunatics, 61.80 were unmarried; whilst during the same period, of persons over fifteen years of age, only 26.74 in 100 were single, a difference which, as he remarks, strikes us at once as decisive. Dagonet² says that the influence of celibacy as a predisposing cause of insanity, is incontestible. In France, according to him and other authorities, there is one insane person for every 528 celibates over fifteen years of age; among widowers and widows the proportion falls to one in 942; whilst among the married it is only one in 1,523. In cities single women are more apt to become insane than bachelors. This, as Dagonet declares, is due to the facts that their occupations are more sedentary, that they are liable to become chlorotic, that not only are they deprived of the fresh air of the country, but are likewise subjected to numerous temptations to an irregular life, owing to the scarcity of their means of support.

Parchappe³ basing his conclusions upon the examination of 17,932 patients, finds that forty-nine per cent. were celibates, and forty per cent married. He also ascertained that single women were more predisposed to insanity than single men. Bucknill and Tuke⁴ state that two-thirds of the patients admitted into the York Retreat were single. Of 1,426 patients admitted into the Colney Hatch Asylum during four years, 645 were unmarried; 643 married, and 138 widowed. The unmarried and the married—disregarding the widowed—were very nearly equal in number. As, however, the number of married persons in England over twenty years of age, is nearly double that of the unmarried, the influence of celibacy in predisposing to insanity is well shown. In his recent and excellent treatise, Dr. Maudsley⁵ says that: "Other things being equal, it is certain that insanity is more frequent amongst the unmarried than amongst the married."

In this country in the absence of any statistics on the subject, we may very safely assume that the proportion of married to unmarried persons is at least as great as in England. It is probably very much greater. Dr.

1 *Traité Pratique des Maladies Mentales*. Paris, 1862. P. 118.

2 *Traité Elementaire et Pratique des Maladies Mentales*. Paris, 1862. P. 188.

3 *Recherches Statistiques sur les Causes de l'Aliénation Mentale*. P. 42.

4 *A Manual of Psychological Medicine*, &c. London: 1868. P. 267.

5 *The Physiology and Pathology of the Mind*. London: 1867. P. 212.

Richard Dunglison¹ however finds that the number of insane is² greater among the unmarried than the married.

Thus, in 25,721 cases, there were :

Single,	12,462	or	48·4 per cent.
Married,	11,150	or	43·3 per cent.
Widowed,	2,092	or	8·1 per cent.
Divorced,	17		

He concludes, therefore, from this and other tables, that :

“ Out of every 1,000 cases of insanity, without regard to sex, 483·8 are married, 484·5 single, and 81·3 widowed ; and out of every 1,000 cases of the male sex, 555 are single, 393 married, and 51 widowers ; while of the same number of females, 429 are single, 436 married, and 135 widows.”

From which it appears that celibacy is in the United States more powerful as a predisposing cause of insanity among men than among women, but that widows are more liable to insanity than widowers. Dr. Kirkbride³ gives a table the results of which are to the same effect. Of 4,776 patients admitted into the Pennsylvania Hospital for the Insane, the proportions with reference to the marriage relation were as follows :

	MALES.	FEMALES.	TOTAL.
Single,	1,385	982	2,317
Married,	1,133	1,024	2,157
Widows,		289	289
Widowers,	118	—	118

From the data which I have quoted, and from a great deal more evidence which might be adduced, it is, I think, very certain that insanity is more prevalent among the unmarried than the married. This fact, however, stated only in general terms, is calculated to mislead to some extent. It is probable that many persons have remained single *because* of insanity, or at least, of eccentricity of character, and it is a question admitting of no doubt, that many persons have become insane after marriage, the causes of which event were clearly traceable to influences growing out of the marital relation. Thus, Esquirol³ shows, that of 1,375 insane persons admitted into the Maison Royale de Charenton, 278, or more than one-fifth, owed their condition to domestic troubles.

¹ Statistics of Insanity in the United States. Reprinted from the N. A. Medico-Chirurgical Review. Philadelphia : 1860. P. 21.

² Report of the Pennsylvania Hospital for the Insane, for the year 1866. Philadelphia : 1867. P. 13.

³ Maladies Mentales t. second. Paris : 1838. P. 278.

Dunglison,¹ out of 11,259 cases of insanity, finds that 928, scarcely one-twelfth, were due to domestic troubles and griefs. It would appear, therefore, either that Americans are less affected by such causes, or that the marriage relation is more happy than in France.

Upon the whole, however, notwithstanding these and other modifying facts, there is no doubt that celibacy predisposes both men and women to insanity.

So far, at least, as women are concerned, abstinence from marriage, when conjoined with seclusion, appears to act with peculiar power in giving rise to mental aberration. Here we have one unnatural condition acted upon and aggravated by another peculiarly detrimental to the female mental and physical organisms. As instances of the effects of these causes, we have only to recollect how very many convents in Europe have been visited by epidemics of monomania. Madden² gives the history of twelve of these institutions, the inmates of which were thus afflicted during the 15th, 16th, and 17th centuries. Generally the epidemics attacked the great majority of the nuns, and in some instances, all suffered. The malady usually took the form of demonomania. Thus, the nuns in the convent of Cambria were supposed to have been visited by evil spirits in 1494, and to have remained possessed four years. They believed themselves tormented in the most horrible manner by demons. The possessed were seen laboring under the conviction that they had been transformed into animals, running about sometimes like dogs, at other times like cats, counterfeiting their motions and their cries; fancying themselves changed into birds, and then striking out in the air with extended arms, as if about to soar into the heavens. Generally some one or more persons were accused of bringing about, through the agency of demons, the torments of the nuns, and suffered death at the stake. In this country the cases of *quasi* insanity occurring under the forms of spiritualism and hysteria at camp meetings, and in churches where religion is preached in a manner more vehement than convincing are mainly met with among single women. Dr. A. Constans,³ in a very interesting account of an epidemic demonomania which visited the village of Morgines, in the department of Haute Savoie, a few years since, shows how the affection attacked, by preference, those who were unmarried. The disease was confined to women—sixty-four of those who suffered were alive, and were personally examined by him. Of those, three were under seventeen years of age when attacked. Of the remaining sixty-one, sixteen were married, two were widows, and forty-three were unmarried.

1 Op. cit. P. 80.

2 Phantasmatia; or Illusions and Fanaticisms of Protean Forms Promotive of Great Evils. London: 1857, vol. 2. P. 287.

3 Relation sur une Epidémie d'Hystéro-Démonopathie en 1861. Deuxième Edition. Paris: 1862.

But the most accurate statistics in regard to the influence of celibacy in producing insanity are those supplied by Dr. H. Girard de Cailleux,¹ based upon the admissions into the Asylum at Auxerre, and compared with the population of the department de l'Yonne. From the table given by this observer, it is seen that of the unmarried there was annually a mean of one admission for every 2,169 inhabitants; of widows and widowers, one for 4,572; of married, one for every 7,049; and of those under puberty, one for every 19,744. The celibates, therefore, furnished more than three times as many insane in proportion to their numbers, as the married.

In all there were 1,227 admissions. Of this number 540 were single, and 408 married; 186 single were affected with mania, and in the married, 160 exhibited this form of insanity; 36 unmarried, and 34 married, had monomania; 116 unmarried, and 134 married, had melancholia; 89 single, and 66 married, had either simple or paralytic dementia; and 65 single, and but 15 married, were affected with epilepsy.

In commenting upon these results of his inquiries, Girard de Cailleux says:

"To what causes are due this marked disproportion? Can it be explained by reference to the more decided egoism which exists among celibates, by the irregularity of their lives, by the excesses into which they plunge more deeply, bound by no tie of interest nor attached with any firmness to the duties of life? Can it be explained by the solitude in which they live, by the greater intensity and depth of the griefs they experience, deprived as they are of any associates who will enter into their hearts, aid them to endure the hardships of life, and console them when the world bears hardly on them? Or, rather, should we with M. Legoyt, attribute this greater proportion of admissions to insane asylums from celibates to the fact that, 'the condition of solitude and isolation of celibacy necessitates the insane of this class to seek the asylums, whilst the married find in the bosom of their families, the care and attention which their condition requires.' We believe in the existence of all these influences."

Dr. R. L. Parsons,² Superintendent of the New York City Lunatic Asylum, in his last report to the Commissioners of Charities and Corrections, gives the following table, which exhibits a similar state of facts to those already quoted:

	MALES.	FEMALES.	TOTAL.
Single,	186	176	312
Married,	101	148	249
Widows,	—	28	28
Widowers,	5	—	5
Total,	242	352	594

¹ *Etudes Pratiques sur les Maladies Nerveuses et Mentales, etc.* Paris: 1863. P. 48. Tab. xii.

² *Seventh Annual Report of the Commissioners of Public Charities and Corrections of New York, for the Year 1866.* New York: 1867. P. 240

Closely allied to the question of the influence of celibacy in producing insanity, is that of its power in causing the perpetration of suicide. In regard to this point there is a difference of opinion, although the weight of authority and of statistics tends to show that this crime is more frequent among single than married persons.

Brierre de Boismont¹ gives data based upon 4,595 cases of suicide. Of this number, 2,080 were unmarried, 1,644 were married, 560 had lost their husbands or wives, and the condition of 311 was unknown.

With reference to these results the author remarks :

"Isolation may, therefore, be considered as a circumstance favorable to the accomplishment of suicide, and this remark has additional force if one embraces in the category the widows and widowers who are in some respects in a condition similar to that of celibacy. In order to appreciate all the influence which celibacy is capable of exercising, it is necessary to recall the fact that the condition of those who are married is much better than that of those who are unmarried. Among the numerous arguments advanced in favor of the family, this should receive attention."

Descuret,² whilst giving no definite statistics, says that he has proven during twenty-five years, that the propensity to commit suicide is much greater among the unmarried than the married. He thinks, that although marriage may render life more agitated and painful, it binds those who contract it more strongly to this world.

Quitlet³ quoting from MM. Serres and Falret says that of men suicide is more common with bachelors, but that of women, those who are engaged in the bonds of matrimony are more prone to this act.

Cazuvieilh gives a table⁴ which exhibits very completely the condition, motives, &c., of 81 persons (51 males and 30 females) who committed suicide. Of this number 49 were married, 22 were widowed and but 10 were celibates.

This author is of opinion that domestic troubles are a very frequent cause of suicide. Seven persons, of those whose cases he has collected, appear to have been driven to self-destruction by the bad conduct of their husbands or wives, inability to support their families, &c. Such cases as the following, which we quote from Cazuvieilh, are doubtless common enough, especially in Europe.

"Adelaide, aged 60, entered the hospital the 20th of November, 1826. Her son being without work, and both in great poverty, she had lost her

¹ Du Suicide et du Folle Suicide, etc. Paris : 1856. P. 81.

² La Médecine des Passions ou les Passions considérées dans leurs Rapports avec les Maladies, les Loix et la Religion. Paris : 1860. T. Second. P. 345.

³ A Treatise on Man and the Development of his Faculties (English Translation). Edinburgh : 1842. P. 82.

⁴ Du Suicide, de l'Allénation Mentale et des Crimes contre les Personnes, etc. Paris : 1840 Pp. 12-13.

reason. Her mind was filled with the most grotesque images; she thought her neighbor's cat was her evil genius. During the night she walked the floor weeping and moaning. She had attempted suicide on the 3d by fumes of charcoal; on the 16th by drowning; on the 17th with a sharp instrument.'

Most physicians are cognizant of cases of suicide arising from family difficulties, but it is probable that when all these are allowed, for the great majority of those who attempt or succeed in self-destruction are celibates. Indeed it has often happened that marriage has destroyed a predisposition to this crime, and two cases of this kind, in which the tendency was hereditary and in which attempts had been made to effect it, have come under our notice.

In regard to the commission of other crimes there is no doubt of the protective influence of marriage. As we have seen, the number of married is much greater than the number of unmarried persons, and yet the proportion of criminals is very much higher in the latter. It would appear that the influence of the family is to make both men and women more moral than they would otherwise be.

Thus in France from the year 1826 to 1850, 185,075 persons were tried in the criminal courts of France.

The following table exhibits their condition as regards marriage.

Celibates,	104,197	equal to 563 per 1,000
Married and having Children,	58,114	" 314 "
Married but without Children,	14,436	" 78 "
Widows and Widowers with Children, . .	6,478	" 35 "
Widows and Widowers without Children, .	1,850	" 10 "

The celibates, therefore, form more than a half of all those tried. It has been seen that they are only about one-third of the whole adult population.

Although we have not been able to obtain any reliable statistics relative to the proportion in this country, observation will very readily convince any one that the facts are about the same here as in France. A few days spent at the Tombs or any other of our police courts will afford abundant evidence in support of this assertion.

And the case has doubtless been the same from the earliest times to the present. We have only to turn to Mr. Lea's treatise to ascertain the effect of the attempt at continence made by persons who were not chaste by nature. Absolute chastity, carried to the extent of eschewing marriage is itself an evil, continence is a still greater one. The former exists when the desire for sexual intercourse is not felt and when, consequently, there is no struggle going on between the intellectual and physical parts of our being; the latter presupposes desire with the resolution not to yield to the inclinations, which with more or less power, force themselves upon the attention. Chastity is natural to a great many women who suffer mentally and physically without

knowing the cause of their ailments. It is natural to very few men. The evils of both are avoided by marriage.

We have thus, to some extent, pointed out the disadvantages of celibacy. We have not touched upon the effect which it undoubtedly exercises in developing certain ignoble qualities of the mind, nor have we shown how marriage softens the whole nature of man and woman, gives them additional objects to live and labor for, strengthens their characters for good, and places them more intimately in relation with their fellow beings. These things are evident to all and require no amplification from us. But there is one point further in regard to which we desire to say a word. Celibacy has its strong points, and it would be unfair to pass them over without some recognition.

In the fact that celibacy increases the feelings of selfishness, which we all have in a greater or less degree, we find that individuals who have an important object in life to attain, are more sure of success when single than when diverted from their point by the cares of a family. That which would be a consolation to others would be simply an incumbrance to them. It would stand in their way, divide their attention and thus draw them off from the goal they have in view. Newton, who probably had the most fully developed mind that has ever existed in the world, was unmarried and it is said never had sexual intercourse in his life. He was one of those naturally chaste men met with but seldom in an age. Had he been married, and certainly had his wife been bad, as, unfortunately, some wives are, it is probable he would never have written the *Principia*. Celibacy undoubtedly increases the individual and collective power of some men. It is for this reason that the church instituted it among the clergy and still maintains it as a principle of her discipline. But for celibacy to attain all its ends, in these respects, it must be voluntary and based on chastity. If there is simply continence and a ceaseless warring of the soul against the flesh, as in the cases of St. Anthony, Origen and others of the fathers, the example loses much of its effect, and for the subject himself, there can only be vexation of spirit.

The Physiology and Pathology of the Mind.¹

THE author states in his preface that the present work is the result of an endeavor to arrive at some definite conviction with regard to the physical conditions of mental function. Some ten years ago, when he first applied

¹ The Physiology and Pathology of the Mind. By Henry Maudsley, M.D., Physician to the West London Hospital, &c. New York: D. Appleton & Co.

himself to the practical study of insanity, he was surprised to find that his theoretical knowledge had no bearing whatever on the facts that daily came under his observation, and that writers on mental diseases considered their subject as belonging to a science which is in no way connected with the study of the sound mind. Accordingly, the work opens with a chapter "On the Method of the Study of the Mind," which is a plea for the association of the Physiological with the Psychological method. We are tempted to give quite fully the thread of the argument, and in doing so we shall use the author's terms and language as much as our limits will allow.

He begins with an account of the historical evolution of the inductive method. Man has ever found it a matter of extreme difficulty to estimate aright his relations to external nature. In the savage state of his infancy he deified the powers of nature, and everything appeared supernatural because he knew nothing of the natural. In time the spirit of inquiry followed upon that of reverence, and man began to feel that he had a higher position in nature than he had imagined, and for a time he looked upon himself as belonging to the same order as the things around him, and sought objectively for the first principles of things.

This method was soon abandoned for the easier and quicker method of deduction from consciousness, and such motives as man felt to influence his own actions were held also to be the principles governing the relations of external objects; and natural phenomena were explained by sympathies, loves, discords, hates, in short man became the measure of the universe, and the examination of nature being entirely ignored, the same things were repeated over and over again in different though indefinite words. If man had always lived in the sunny climes of the South which encourage indolence, they might have continued to speculate, but when they were forced by persevering labor to obtain the means of subsistence from the sterile bosom of nature they naturally inquired into her processes and secret ways. Bacon was the efflux of this spirit, and it was he who systematized the principles of the inductive philosophy, and taught mankind with design and method to interrogate nature. Knowledge enters through the senses, and the intellect devises means for increasing the action and discriminating exactness of the senses.

Thus much for the historical evolution of the inductive method. But now comes the important question, can we apply it to the investigation of psychological as well as of physical nature? It certainly is not possible to form true inductions of the mental acts of others simply by observing them, for we may be misled by conscious or unconscious hypocrisy, as well as by the tendency to interpret the action of another mind according to the measure of our own. Nor can we in the present state of physiological science ascertain by observation and experiment the nature of those organic processes which are the bodily conditions of mental phenomena. There remains to us the

method of investigating self-consciousness. Can this supply the facts for the building up of a truly inductive psychology? Can we expect by this means to succeed in what Plato failed to accomplish? Can consciousness be relied on as a witness of that which takes place in the mind? It may well be doubted, and for the following reasons: There are but few persons who are capable of attending to the succession of phenomena in their own minds, and between those who have acquired the power of introspection there is no agreement. In order to observe its own actions it is necessary that the mind pause from activity, and yet it is the train of activity that is to be observed. The madman's delusion is of itself sufficient to excite profound distrust in the subjective worth of the testimony of an individual's self-consciousness, hence psychologists have long held that the veracity of consciousness is to be relied upon only under certain rules.

Another charge against self-consciousness is that it does not give any account of a large and important part of our mental activity; it takes notice only of states of consciousness and not of states of mind. The following reasons also further warrant the assertion that self-consciousness cannot supply the facts for the building up of a truly inductive psychology. It is the fundamental maxim of the inductive philosophy that observation should begin with simple instances, ascent being made from them through appropriate generalization. Now, the interrogation of self-consciousness is applicable only to mind at a high degree of development, so that it perforce begins with those most complex instances which give the best certain information.

In the accepted system of psychology the animal or child has no place, whereas a psychology which is truly inductive must follow the order of nature, and begin where mind begins, gradually rising to higher and more complex mental phenomena.

As consciousness gives no account of the essential material conditions which underlie every mental manifestation, so the received system of psychology pays no attention to the variations of feeling in the same individual which are due to temporary modifications of the bodily state, and by which the ideas of the relations of objects to self and to one another are so greatly influenced; on the contrary, the individual is an inconvenience to this system, which in neglecting constitutional peculiarities ignores a large class of valuable facts.

There is an appropriation of external impressions by the mind or brain which regularly takes place without any, or only with a very obscure affection of consciousness. Not only slight habits of movement are thus acquired, but habits of thought and feeling are imperceptibly organized; so that an acquired nature may ultimately govern one who is not at all conscious that he has changed. It is thus clearly a truth which cannot be too distinctly borne in mind, that consciousness is not co-extensive with mind.

Everything which has existed with any completeness in consciousness is preserved, after its disappearance therefrom, in the mind or brain, and may reappear in consciousness at some future time. Now, consciousness is not able to give any account of the manner in which these various residua as they are called, are perpetuated, nor can it tell us how they exist latent in the mind, in other words it is helpless to give any account of the statical condition of the mind.

But as statical mind is in reality the statical condition of the organic element which ministers to its manifestations, it is plain that if we ever are to know anything of inactive mind, it is to the progress of physiology that we must look for information. Consciousness reveals nothing of the process by which one idea calls another into activity, and has no control whatever over the manner of the reproduction; it is only when the idea is made active by virtue of some association, when the *effect* solicits or extorts attention that we are conscious of it; and there is no power in the mind to call up ideas indifferently. In composition, for instance, the writer's consciousness is engaged chiefly with his pen, and with the sentences which he is forming, while the results of the mind's working flow, as it were, from unknown depths into consciousness, and are by itself embodied in appropriate words. Not only is the actual process of association of our ideas independent of consciousness, but that assimilation or blending of similar ideas, or of the like in different ideas, by which general ideas are formed, is in no way under the control or cognizance of consciousness.

It would thus seem that the most important part of mental action, the essential process on which thinking depends is unconscious mental exertion. How then can self-consciousness suffice to furnish the facts of a true mental science? The deep basis of mental action lies in the organic life of the brain, the characteristic of which in health is, that it proceeds without consciousness. He whose brain makes him conscious that he has a brain is not well but ill; and thought, which is conscious of itself, is not natural and healthy thought.

Such are the charges against self-consciousness whereon are founded the conclusions as to its incompetency. They show that he who thinks to illuminate the whole range of mental action by the light of his own consciousness, is not unlike one who should go about to illuminate the universe with a rush light. A reflection on the true nature of consciousness will surely tend to confirm that opinion.

Metaphysicians at one time considered it synonymous with mind, at another time with knowledge, and at another it is used to express a condition of mental activity.

That there should be such little certainty about that upon which their philosophy fundamentally rests, must be allowed to be a misfortune to the metaphysician. What consciousness is will appear better if its relations be

closely examined without prejudice. It will then appear that it is not separable from knowledge; that it exists only as a part of the concrete mental act; that it has no more power of withdrawing from the particular phenomena, and of taking full and fair observation of it than a boy has of jumping over his own shadow. Consciousness is not a faculty or substance, but a quality or attribute of the concrete mental act; and it may exist in different degrees of intensity or it may be absent altogether. In so far as there is consciousness, there is certainly mental activity; but it is not true that in so far as there is mental activity there is consciousness, for it is only with a certain intensity of representation or conception that consciousness appears. The truth is that what has often happened before has happened here: the quality or attribute has been abstracted from the concrete, and the abstraction then converted into an entity; the attribute consciousness has miraculously got rid of its substance, and with a wonderful assurance assumed the office of passing judgment upon its nature.

That which a just reflection incontestably teaches, the present state of physiology practically illustrates. Though very imperfect as a science, physiology is still sufficiently advanced to prove that no psychology can endure except it be based upon its investigations. Let it not, moreover, be forgotten as it is so apt to be, that the divisions in our knowledge are artificial; that they should be accepted, and used rather, as Bacon says, "for lines to mark or distinguish, than reactions to divide and separate; in order that solution of continuity in sciences may always be avoided. Above all things it is now necessary that the unholy barrier set up between psychical and physical nature be broken down, and that a just conception of mind be formed, founded on a faithful recognition of all those phenomena of nature which had by imperceptible gradations up to this its highest evolution. No one pretends that physiology can for many years to come furnish the complete data of a positive mental science, all that it can at present do is to overthrow the data of a false psychology.

It is easy, no doubt, for any one to point to the completeness of our ignorance, and to maintain that physiology never will securely fix the foundations of a mental science, just as it was easy to say, before the invention of the telescope, that the ways of the planets could never be traced and calculated. The confident dogmatist in this matter might well learn caution from the following example of the rash error of a greater man than himself:—"It is the absurdity of these opinions," said Bacon, "that has driven men to the diurnal motion of the earth; *which, I am convinced is most false.*"

The physiological method is only one division of the objective method; there are other divisions not less valuable. The study of the *plan of development* of mind, as exhibited in the animal, the barbarian, and the infant, furnishes results of the greatest value, and is as essential to a true mental science as the study of its development confessedly is to a full knowledge of the bodily organism.

The study of the *degeneration* of mind, as exhibited in the different forms of idiocy and insanity, is indispensable as it is invaluable. So we avail ourselves of the experiments provided by nature, and bring our generalizations to a most searching test.

The study of the progress or regress of the human mind, as exhibited in *history*, most difficult as the task is, cannot be neglected by one who wishes to be thoroughly equipped for the arduous work of constructing a positive mental science.

May we not then truly say that he only is the true psychologist who, occupied with the observation of the whole of human nature, avails himself not only of every means which science affords for the investigation of the bodily conditions which assuredly underlie every display of function, conscious or unconscious, but also of every help which is furnished by the mental manifestations of animal and of man, whether undeveloped, degenerate, or cultivated?

It were well that this idea took deep and firm root in our thoughts: that the development of mind, both in the individual and through generations, is a gradual process of organization—a process in which nature is undergoing her latest and most consummate development. In reality we do not fail virtually to recognize this in the case of language, whose organic growth, as we scientifically trace it, is the result of the unseen organization of thought that lies beneath, and alone gives it meaning.

Our space compels us to deal with the other portions of the book much more briefly. In the 2d chapter which treats of "The Mind and the Nervous System," the term "mind" is shown to be used in a scientific sense as a natural force; and in a popular sense as an abstraction made into a metaphysical entity. In the first place, mind viewed in its scientific sense as a natural force, cannot be observed and handled and dealt with as a palpable object; like electricity, or gravity, or any other of the natural forces, it is appreciable only in the changes of matter which are the conditions of its manifestations.

In the second place, it is a general term acquired by observation of and abstraction from the manifold variety of mental phenomena: by such observation of the particular phenomena and appropriate abstraction from them we get, as an ultimate generalization, the general conception, or the, so to speak, *essential idea*, of mind.

The development of the nervous system and of the organs of special sense, from their simplest to their most complex conditions, is considered and connected with the corresponding differences in intellectual development of animals.

In the 3d chapter the author treats of "The Spinal Cord and Reflex Action." A large part of human activity notably takes place without any voluntary control, or even without any consciousness on the part of the

individual; and of these unconscious or involuntary actions a great part is as plainly due to the independent power of reaction which the ganglionic cells of the spinal cord have. Such automatic action of the spinal cord may be illustrated both from the animal kingdom and from the phenomena of human life. The earliest actions of the new-born infant are simply reflex to impressions, and take place without will or even without consciousness. The anencephalic infant, in which absence of brain involves an absence of consciousness, not only exhibits movements of its limbs, but is capable also of the associated reflex acts of sucking and crying. The experiments of Pflüger, on a decapitated frog, are also given to prove that the spinal cord is not only a centre of irregular reflex movements, but also a centre of co-ordinate or so-called designed actions. Further, it is the centre not only of co-ordinate action, the capability of which has been implanted in its original constitution, but also of co-ordinate action the power of which has been gradually acquired and matured through individual experience, hence, like the brain, it has, so to speak, its memory. In fact the faculties of the spinal cord for the most part, in their formation, illustrate the progress of human adaptation to external nature. The regular transmutation of motions which are at first voluntary, into secondary automatic motions, as Hartley calls them, is due to a gradually effected organization; and we may rest assured of this, that co-ordinate activity always testifies to stored-up power, either innate or acquired. The way in which an acquired faculty of the parent animal is sometimes distinctly transmitted to the progeny as a heritage, instinct or innate endowment, furnishes a striking confirmation of the foregoing observation. Power, which has been laborously acquired and stored up, as statical in one generation, manifestly in such cases becomes the inborn faculty of the next.

Chapter 4th treats of "The Censory Centres, Sensation, and of Sensori-Motor Movements." Of these latter, examples may be found in the involuntary closure of the eyelids when the conjuncture is touched, or when a strong light falls upon the eye; in the distortion of the face on account of a sour taste; in the quick withdrawal of the hand when it is touched by something hot.

It was said, when treating of the spinal cord, that its faculties were for the most part, not innate but acquired; and the same thing may be said of sensations. Sensation is not, as the common use of the word might seem to imply, a certain inborn faculty of constant quantity, but in reality a general term embracing a multitude of particular phenomena that exhibit every degree of variation, both in quantity and quality. The sensation of each sense is a gradually organized result or faculty that is matured through experience: the visual sensation of the adult is a very different matter from that of the child whose eyes have recently opened upon the world; the wine-taster's cultivated sense is nowise comparable with that of a man who

knows nothing of wine; the tactile sensation of the blind man differs *toto coelo* from that of the man who has always had the full use of his eyes. The complete and definite sensation is slowly built up in the proper nervous centres from the residua, or braces, which previous sensations of a like kind have left behind them; and the sensation of the cultivated sense thus sums up, as it were, a thousand experiences, as one word often contains the accumulated acquisitions of generations. Of more importance than the *innate* sensori-motor acts in human development are those which are *acquired*, and which are often called the secondary automatic acts. When any one moves about a house or a room, with the objects in which he is quite familiar, he is scarce more conscious of the greater part of his movements, or of the objects around him, than he is of the movements of his breathing, or of his particular steps in walking. Everyone knows that it is sufficiently easy to read aloud without the slightest attention to the meaning of what is read, the consciousness being otherwise engaged. Language, difficult as it is of acquisition, ultimately gets all the ease of a reflex act; hence, talking may be conscious, semi-conscious, or entirely unconscious. The author argues that, from a physiological point of view, these acts are readily accounted for. They are, as was contended when speaking of the spinal cord, the necessary result of a certain constitution, innate or acquired, of the nervous centres.

In the 5th chapter "The Supreme Cerebral Centres and Ideation" are considered. The costical cells of the hemispheres are now held by those who have most studied the physiology of the brain to be the nervous centres of ideas; and though it is extremely probable that different convolutions of the brain subserve different functions in our mental life, yet the precise mapping out of the cerebral surface, and the classification of the mental faculties, which the phrenologists have rashly made, will not bear scientific examination.

Recently some observations have been made with the view of establishing a theory, that a portion of the anterior lobe, the third frontal convolution of the left hemisphere, was the seat of language; but the observations reported are unsatisfactory, directly contradictory observations are overlooked, and it is contrary to the first principles of physiology to suppose that language, complex and organic as it is in its intellectual character, as the sign or symbol of the idea, can have so limited and defined a seat in the brain. On the whole, it must be confessed that, so far, we have not any certain and definite knowledge of the functions of the different parts of the cerebral convolutions.

"As it was with the faculties of the spinal and sensory centres, so is it with the faculties of the ideational centres: they are not innate. The notion of *innate* idea, in the exact meaning of the word, as connatural or contemporary with birth, is not less untenable and absurd than an innate pregnancy. But if by innate is only meant that, by the necessity of his nature,

a well-constituted individual, placed in certain circumstances, will acquire certain ideas, then all the phenomena of a man's life, bodily or mental, are just as innate or natural. It is necessary here to distinguish between what is *predetermined* by the nature of things and what is *performed*. The formation of an idea is an organic evolution in the appropriate nervous centres, a development which is gradually completed in consequence of successive experiences of a like kind."

To acquire those so-called fundamental ideas—universal intuitions, or categories of the understanding—of which some metaphysicians make so much, as constant elements, though they differ greatly in value in different people, there is no other need but, using Hobbes' words, "to be born a man, and live with the use of his five senses." Ideas reach in different ways. Their energy may be exerted upon the involuntary muscles, as, for instance, the idea that vomiting must take place, when a qualmish feeling exists, will certainly hasten vomiting; or the voluntary muscles may be acted on as is witnessed in every hour of our waking life. Ideas act also upon the sensory ganglia. The idea of a nauseous taste may excite the sensation to such a degree as to produce vomiting; the images of dreams are sometimes, as Spinoza has remarked, really visible for a while after the eyes are open. In order to form a distinct and definite conception of what is not present to sense, we are compelled to form some sort of image of it in the mind, hence the action of idea upon our sensory ganglia is a regular part of our mental life; and intellectual development depends, not only upon the cultivation of careful habits of observation, but also upon the co-operation of the sensory centres in the subsequent intellectual action.

Ideas may act upon the functions of nutrition and secretion. The idea of food will cause a flow of saliva, and a sympathetic idea, a flow of tears.

There is yet another path which the energy of an idea may take. One idea may call up another, itself disappearing in the act, as in reflection. In this connection the author gives some attention to the question of the time necessary for the performance, so to speak, of an idea, and to show that sometimes it is not less than the time required for the performance of a muscular motion, cites the observation of Dr. Darwin, that a musician can press the keys of a harpsichord with his fingers, in the order of a tune which he has been accustomed to play, in as little a time as he can run over those notes in his mind. Nay, an idea may even require more time than a movement—how many times in a day do we cover our eyes with our eyelids without ever perceiving that we are in the dark? In this case the muscular motion of the eyelid is performed quicker than the idea of light can be changed for that of darkness—the twinkling of an eye being quicker than thought.

The other chapters on emotion, volition, memory and imagination, which are fully as interesting as those we have noticed, our limits compel us, for

the present, to pass by, and to proceed to the consideration of the second part, treating of the pathology of the mind.

Owing to the length, however, to which this review has already extended, we shall not be able to follow Dr. Maudsley through all the interesting matter contained in this section, or to do more than simply point out some of its more important features.

The first chapter is devoted to the consideration of the causes of insanity. It would be well, we think, if this chapter were published in separate form, and scattered broadcast throughout the land. It is so full of sensible reflections and sound truths that their wide dissemination could not but be of benefit to all thinking persons.

As Dr. Maudsley says: "When we are told that a man has become deranged from anxiety or grief, we have learned very little if we rest content with that. How does it happen that another man, subjected to an exactly similar cause of grief, does not go mad?" The answer is very obvious. If all other men were exactly alike in mental organization, and subjected to the same collateral influences as the one who has gone mad from grief, they would all inevitably become insane from a like cause.

In chapter second a very full account is given of the insanity of early life. That children—and very young ones, do become insane, admits of no doubt. As Dr. Maudsley shows, however, their mental aberrations cannot be so complex as those of adults. Many a child suffering from a paroxysm of true maniacal excitement, has been punished for giving way to bad temper. The minds of children are more or less a mystery. We cannot search them as we would grown persons, and they are incapable of giving satisfactory accounts of their feelings and impulses. Many children are subject to hallucinations, which they take for realities, and which they detail with much minuteness to their elders, perhaps to be met with the charge of falsehood, and subjected to punishment. They are also often incapable of discriminating between dreams and actual events. We should recollect, therefore, that an apparent tendency in a child to romancing, does not necessarily imply that there is an aptitude for wilful falsehood, and we should deal gently and wisely with all such cases, lest we set up a morbid action in the infant mind which will result in hopeless insanity. The chapter on the varieties of insanity is well and sensibly written, as it refers to many interesting cases in illustration.

The fourth chapter is devoted to the Pathology of Insanity. Dr. Maudsley, of course, takes the sensible view that there is necessarily an organic change in the brain in all cases of mental disease, and although, with our present means of research, we cannot always detect these changes, we may be very sure that they exist.

The fifth and sixth chapters treat of the Diagnosis and Prognosis of Insanity, and the seventh, and last, of the Treatment. In regard to this latter

Dr. Maudsley confesses that in no other disease are the difficulties so great. Not only is there a very serious disease to deal with, but social prejudices are to be combatted, and wilful or unavoidable perversions of the truth, on the part of the patient and his friends, are to be encountered. Notwithstanding all these obstacles to success, there is no doubt but that we are constantly becoming more expert in the management of insanity—and as we study with still greater care the physiology of the mind, we are sure to become still more proficient in our practice.

In taking leave of Dr. Maudsley's volume, we desire again to express our gratification with the results of his labors, and to express the hope that he has not yet ceased his studies in the important field he has selected. Our thanks are also due to the American publishers for the very handsome manner in which they have reprinted a work which is certain to do credit to a house already noted for its valuable publications.

BIBLIOGRAPHICAL NOTICES.

A Treatise on Emotional Disorders of the Sympathetic System of Nerves. By WILLIAM MURRAY, M.D., M.R.C.P., Lond. etc., etc. New York: A. Simpson & Co. 1866. 8vo. pp. 95.

THIS little brochure of ninety-five pages opens up a very extensive field of inquiry—a field the cultivation of which has been too much neglected. The reciprocal influences of mind and body are not enough considered, and have never been sufficiently studied. We do not mean to say that they have been ignored, nor that important facts relating thereto have not long been known; but the extent of these influences, their practical bearings, and the means by which they are exerted, offer a wide scope of investigation. What are the morbid conditions of mind fairly attributable to corporeal disorder? Here is a question leading to truths, as yet but partially ascertained, which enter largely into not only mental pathology and psychology, but jurisprudence, religion, social life, and the domestic relations; so, also, the morbid effects of mental influences upon the body are, as yet, very imperfectly known, and they are doubtless hardly less important as entering into etiology. It is measurably, and perhaps chiefly owing to the operation of these influences that the human race is affected more frequently with disease and with a larger number of maladies than inferior animals.

Dr. Murray's little work is entitled "A Treatise on Emotional Disorders of the Sympathetic System of Nerves." He treats, *first*, of the effects of emotions

upon the economy, and, *second*, of the "diseases which are accompanied by derangement of that equilibrium of emotion which goes far to make up the happy, sound and healthy mind." A vivid emotional excitement gives rise, as every one may know by introverted attention, to a sense of uneasiness referable to the abdominal viscera. This *visceral sensation*, as the author calls it, he supposes to be produced by an influence exerted through the cerebro-spinal system of nerves upon the sympathetic system. It is by means of mental influences upon the latter system of nerves that the morbid effects of emotional disorder manifested in parts of the body other than the cerebro-spinal organs, are produced; *per contra*, it is by means of morbid influences exerted primarily upon the sympathetic nerves, and thence transmitted to the cerebro-spinal system, that mental disorders are produced by diseases affecting other organs than those directly connected with mental operations.

The effects of emotion on the organs of circulation, the involuntary muscular fibres, the secreting glands, the digestive apparatus, the generative organs, and, on the other hand, the mental effects of diseases affecting different parts of the economy, are briefly considered. A few pages of the work are devoted to the treatment having reference, *first*, to the prevention and cure of the ill effects of severe or injurious emotions: and, *second*, to the diseases which induce emotional distress.

It is quite needless to say that in so small a work no portion of the subject is exhausted. The author disclaims anything beyond entering upon a line of investigation which remains to be followed out. Small as it is, however, the volume contains not a little interesting and useful matter; and we are glad to see a reprint of it in the attractive style of the works which come from the press of A. Simpson & Co.

Treatment of Fractures of the Lower Extremity by the Use of the Anterior Suspensory Apparatus. By N. R. SMITH, M.D., Professor of Surgery in the University of Maryland. Baltimore: Kelly & Piet, 1867. 8vo., pp. 70.

The object of this monograph is to describe and illustrate the method of treating all fractures of the thigh and leg by the anterior suspensory apparatus, which its author devised some years ago, and which his experience, both in hospital and private practice, has satisfied him it will perfectly accomplish. This opinion, we believe, is sustained by the experience of those surgeons who have largely used Dr. Smith's apparatus. It meets the chief indications required in the treatment of fractures of the lower extremity, particularly compound ones, the damaged soft parts being accessible without removing any of the essential supports of the injured limb; and, moreover,

its construction is simple, and its application easy—it does not require frequent readjustment, and it is inexpensive.

The little volume is attractively printed upon tinted paper, and will, no doubt be largely, and we think, profitably, read by the profession.

The Mineral Waters of the United States and Canada, with a Map and Plates and General Directions for reaching Mineral Springs. By J. J. MOORMAN, M.D., Resident Physician at the White Sulphur Springs, &c. Baltimore: Kelly & Piet, 1867, pp. 507, 12mo.

The want of a good guide to the mineral springs of the United States and Canada has long been experienced, and Dr. Moorman has done some service by this timely publication. We do not in this country make use as fully as we should of the medicines which, in the shape of mineral springs, nature has prepared ready for so many of our ills. We are too much disposed to regard them as places of fashionable resort, where dancing, and gaming, and horse-racing can be indulged in without restraint. It would be much better for all concerned if this could be changed—if the sick and miserable could have the entire use of the springs suitable for their cases, and those who seek recreation would take themselves off to other places.

There is a good deal of valuable information in Dr. Moorman's book, and no small quantity of trash. When he treats of mineral waters, their composition and character, he writes well, and as though he understood the subject; but his remarks on the pathology of the various affections for which he recommends mineral waters are often absurd. His speculations upon what he calls "*sympathetic* consumption," on bronchitis, and on paralysis, are examples of loose reasoning which disfigure the book, and the following extract is a specimen of fine writing and nonsense which would be strangely out of place were there not other paragraphs in the volume almost as bad.

After an attempt at describing the routine of amusement at the White Sulphur—which effort, Dr. Moorman confesses, gives no adequate idea of what is at once the "Athens and Paris of America"—he says:

"The pleasant walks that penetrate the lawns and environ the grounds invite many to healthful exercise. The billiard saloon, with its numerous tables, entices many votaries; the bowling alleys now resound with the merry laugh of youth and beauty, and thus the hours glide swiftly away; while from another portion of the grounds is heard the clear, keen report from the pistol gallery, telling how promptly *Young America* is preparing to avenge his insulted honor."

In the ball-room we are told that "pleasure reigns supreme: the heart-

toned laugh, the witty word, the amiable repartee, all tell that those assembled here are just sipping the bubbles from the overflowing cup of joy."

In this quotation the power of association over Dr. Moorman's mind is well seen, the simile employed being obviously suggested by the image of a cup of white sulphur-water giving off its bubbles of sulphuretted hydrogen gas.

Persons who admire an exaggerated style will like Dr. Moorman's book, and those who do not can skip such passages as those we have quoted, and will find many serviceable ideas which they can appropriate with advantage.

Notes of Observations to ascertain the Ultimate Distribution of the Nerves of Gestation. Their Ultimate Distribution not Terminal. By RUFUS KING BROWNE, M.D., &c.

Dr. Browne concludes, from the observations which have been made by himself and others, that the nervous tissue does not terminate in the organs to which it is distributed, but is an undivided continuation from centre to periphery and back. His essay concludes with a very full bibliography of the subject.

On the Principles of Æsthetic Medicine, or the Natural Use of Sensation and Desire in the Maintenance of Health and the Treatment of Disease, as demonstrated by Induction from the common Facts of Life.—By JOHN PEEL CATLOW, M.R.C.S. London: 1867, pp. 325, 8vo.

There is much in this treatise that is suggestive and philosophical; but the major part of the speculations and assertions are so veiled by obscurity of diction, that it is often difficult to catch the author's exact meaning. We are told in a note prefixed to the volume that Mr. Catlow died before he had an opportunity of further elucidating his ideas. To this event is doubtless due the imperfect condition in which the work now is.

The objects which the author had in view are indicated in the following paragraph, taken from the introduction:

"I shall, therefore, endeavor to demonstrate the fundamental and pregnant axioms of hygienic and medical doctrine by a direct induction from natural facts, and I propose to do this, in the first place, from the common facts of life, inasmuch as they will prevent the necessity of referring (except merely for the sake of illustration) to private observations or experiments, and of imposing or acknowledging any personal or private authority whatever in their favor; these being, in my humble opinion, the only safe and satisfactory conditions of an induction so vitally and diffusively important as that of a

fundamental principle to which we may rationally hope to subordinate all the more particular observations and experiments that are to form the superstructure of hygienic and therapeutic science."

Mr. Catlow's diffuse and obscure mode of expression is well seen in the foregoing extract; and yet, notwithstanding the faults of his style, it is plainly to be perceived from a perusal of his book that he had thought long and deeply upon the subjects of which it treats. Of the several sections into which the treatise is divided, those relating to the origin of ideas, to the will, to the use and abuse of association, and on the abnormal conditions of life, are especially worthy of attention.

Mr. Catlow concludes his work with a synopsis of his doctrines, which we quote in full. If we had read nothing of the volume but the synopsis, we confess we should be at a loss to understand the author's drift. In the hope that some of our readers may be more fortunate in comprehending Mr. Catlow's general and concise statement of his views, we subjoin the synopsis in full:

"The extrinsic postulates of the living system with the passive and active relation of living beings to each other and to their common Creator, in all its modes of health and disease, are naturally indicated by the susceptibility of the external senses to perceptibly pleasant or organically congenial impressions from their severally appropriate objects, as such impressions are mutually modified, and by the appetites or apparent motives that are suggested or excited and modified by their perception, remembrance, or incidence, independently, socially, or casually induced."

We are loth to criticise adversely a work displaying so much sound learning, and written with such excellent intentions, as the one before us. The faults of its style will, however, deter many from perusing it to the end, who otherwise would be delighted with its sound doctrines in psychology, physiology, and morals. If authors only knew how much they and science lose by obscurity of language and excessive verbiage, they would more frequently take pains to clothe their thoughts in simple and attractive phrases.

Les Aliénés devant la Loi. Par le Docteur A. MOTET. Paris: 1866.

The Insane in their Legal Relations. By Dr. A. MOTET.

M. Motet, in this interesting monograph, combats with much vigor the doctrine that the insane are more advantageously treated in their own homes than in asylums. Certainly those who contend for the application of domiciliary treatment to this unfortunate class of invalides can have very little practical knowledge of the subject, and no very profound or exact information relative to the nature of insanity.

M. Motet discusses with much ability the legal questions connected with the admission to and discharge of patients from asylums. It would appear that there is in France too great a degree of difficulty in getting an insane person committed to an asylum, and too great a facility in obtaining a discharge therefrom. It is difficult to make the law-enacting power of a civilized country comprehend the phenomena of insanity, or to sympathise with those who devote themselves to the cure of mental disorders.

In the United States we feel bound to say that there is less difficulty in this respect and less prejudice against asylums than in any other country in the world—though even with us there is a degree of popular ignorance on the subject which might be removed with advantage.

CHRONICLE.

CASES ILLUSTRATIVE OF THE INSANITY OF PREGNANCY, PUERPERAL MANIA, AND INSANITY OF LACTATION: By John B. Tuke, Esq., M.D., Medical Superintendent of the Fife and Kinross District Lunatic Asylum.—The object in compiling the following series of cases is to illustrate, as far as possible, the facts which seem to me to have been deduced from the statistical inquiry into the symptoms and peculiarities of puerperal insanity, as observed in the Royal Edinburgh Asylum, published in a former number of this Journal.¹ Since that time I have met with several cases, which have strongly confirmed my opinions based on that inquiry, and strengthened especially the more important results as to diagnosis, treatment and prognosis. Further consideration and observation of this series of diseases, generally classed under the one head of puerperal insanity, viz., insanity of pregnancy, puerperal insanity, and insanity of lactation, have led me to further conclusions which were not embodied in the original paper, conclusions which tend to point out more fully the necessity for considering them as separate and distinct forms of disease. It is not presumed that these observations are entirely original; there is little doubt that the same remarks have been made by physicians under whose care such cases are placed, but no notice is taken in any systematic work on mental affections of many of the salient points of the disease, and some have been omitted in the pamphlets especially devoted to the subject.

On reflection, a difficulty suggested itself in the fact that these diseases very often run one into the other,—that the insanity of pregnancy does not generally cease with labor, and that mental symptoms occasionally occur within two or three months after delivery, before the system of the patient could be so exhausted by nursing as to produce insanity from anæmia,—thus rendering accurate classification difficult or impossible. Again, the variety in the form of aberration in each class militated against the idea of pathognomonic symptoms. But a careful revision of the tables obviated these difficulties to a very considerable extent, and proved beneficial in demonstrating more

fully that, with very rare exceptions, the several diseases are evidenced by well-marked, peculiar, and persistent indications.

On glancing over the tables (pp. 1025-1028, vol. x.), it will be seen that there is a marked preponderance of certain mental symptoms in the aggregate of each class. Thus, in insanity of pregnancy, 20 are reported as cases of melancholia, 6 as moral perversion and dyspomania; in puerperal insanity proper 53 as cases of acute mania, 15 melancholia; in insanity of lactation, melancholia 39, acute mania 10. The balance of exceptional cases, dementia and epileptic insanity, seemed so slight as to lead to the suggestion that they were not exceptional, but that circumstances connected with them had not been ascertained, or that material symptoms had been overlooked in the report. In many instances this proved to be true, in others the lapse of time was so great as to make inquiry impossible.

To a certain extent there always exists a source of fallacy in observations based on the case-books of a public hospital. This depends on the imperfect, at times false, information obtained with the patient. This remark extends to all classes of the insane, rich or poor, as regards the obtaining of a history of previous attacks, hereditary predisposition, and even the earlier symptoms of the disease. I reiterate this common complaint of all asylum physicians, partly in order to excuse us from a not unfrequent accusation, that of not inquiring into the previous history of patients, and of ignorance of very important facts tending to an accurate diagnosis of cases placed under our charge. The fault seldom lies with us. Amongst the higher classes relatives suppress the truth, or even pervert it. In the case of paupers, inspectors of poor frequently, from negligence, ignorance, or carelessness, do not furnish the information demanded in the statutory statement, which is in itself insufficient. It is careful in its inquiries as to the age, sex, and religious denomination of the patient, but does not insist on important points, such as previous habits, state of health, disposition, and character. This statement not only does no good, but often misleads, but could be rendered of great benefit if, more particularly in the case of paupers, the parochial surgeon were required to furnish such information instead of the inspector of poor. In certain cases this is impossible; but in a large number, the medical man of the parish is acquainted with the whole history of the patient, but has no opportunity of notifying to the asylum physician facts material to the proper treatment of the case. In a disease dependent upon actual structural derangement, but which is often only characterized by mental alienation, too close inquiry is impossible; and were we furnished in every case with a full and particular report, there can be little doubt that a larger proportion of recoveries would ensue. It must consist with the experience of every alienist that where an accurate history of the bodily ailments has been furnished, the patient has soonest recovered mental health or if such was not the happy result, the minds of friends have been satisfied by a distinct prognosis.

These observations may seem beside the mark; they were however suggested by the consideration of those cases whose symptoms seemed exceptional to the mass. But it may be well to examine separately each of the diseases referred to.

Insanity of Pregnancy.

Out of a series of 28 cases of this form of disease, only two are reported as characterized by mania. On more particular inquiry, it was discovered that one of these women had suffered from an attack of true puerperal insanity after a previous confinement, of which no history had been afforded, and which was only ascertained by the merest accident. Moreover, she had been subject to recurrent attacks at intervals, and therefore it was to be expected that the affection, with the symptoms of mania, should reappear during pregnancy, predisposed as she was to insanity in that form. The

other case occurred too long ago for inquiry ; but as it stands solitary in a long series, there is presumptive evidence that it was of a similar nature with the one last alluded to. Mania is not the symptom one would expect to appear during pregnancy ; melancholy, with or without moral perversions seem not unnatural consequences. There are few fecund women who do not evince some symptoms, however slight, of a reflex affection of the faculties, in the form of morbid appetites or longings, or change of temper and disposition ; should these go on to actual insanity, moral perversion or melancholy are the most *likely* results, and, as shown by experience, are so. I think it will be found that in those rare instances where mania occurs, the patient has previously been the subject of insanity in that form, and therefore that we are justified in laying down that melancholy, occasionally associated with moral insanity, is *the* mental symptom characterizing the insanity of pregnancy.

Cases are on record in which the insanity of pregnancy is said to have disappeared with labour. This does not seem to be a common result ; in fact, even if the mental symptoms abate or entirely disappear before confinement, the rule is that they again present themselves. If they persist up to that period, an improvement is often noticeable for a week or more ; but, as far as my observation goes, and it is confirmed by that of others, they generally crop out again for a shorter or longer space of time. This tendency to recurrence will, however, be more fully alluded to when considering puerperal insanity proper.

The following cases seem to me to illustrate the insanity of pregnancy pretty fully :—

A. B., married, æt. 23, wife of labourer. Her mother became insane late in life.

This woman was naturally of cheerful disposition, steady, and industrious. During the third month of her first pregnancy she became very much depressed in spirits and took a strong aversion to her husband. She suffered much from the usual symptoms of pregnancy. The melancholy rapidly became more intense. She attempted suicide by cutting her throat, but did not succeed in hurting herself severely. She never evinced any definite delusion. She was for three months under treatment, and improved so much as to be to all appearance well, and was discharged recovered. She was confined in due course ; the labor was natural, although somewhat prolonged. Three weeks after, the depression and melancholy returned, and she was again sent to the asylum, where she remained for three months, gradually improving, and was again discharged recovered. She has born two children since then, but no recurrence of the malady has been observed.

A. C., æt. 21, married, wife of tradesman. Her sister and maternal aunt have been insane, the latter under treatment on three several occasions in an asylum.

During the fifth month of her first confinement she became very low-spirited and depressed. She attempted suicide by drowning, but did not succeed in her intention, from the shallowness of the water, although she persevered for several hours. The attempt was made in the sea, where the sands were not deeply covered, and extended so far out as to make it difficult or impossible for her to reach deep water, so that as the tide receded she was always left high, if not dry, after each effort to affect her purpose. From this melancholy state she partially recovered, and her baby was born in due course. Eleven weeks after its birth she deliberately strangled it, and then attempted to poison herself with laudanum. At the instance of the Procurator-fiscal she was visited in prison by Drs. Maelagan and Skae, who reported on her case. On the various occasions these gentlemen saw her she seemed happy and contented, exhibiting symptoms of a morbid exaltation, talking of the prison being a palace to her, and was occasionally mildly excitable. On certificates being granted that she was convalescent from an

attack of "suicidal and homicidal insanity," she was removed to Morning-side. On admission she seemed perfectly happy, made herself quite at home, and settled at once to work. Her mind was evidently very weak, she was facile and reserved. A few weeks after her admission, I got her to converse about her child, and her motives for destroying it. She was not in the least confused nor did she seem to appreciate her position. She said that her impression at the time was that it would be happier if it was dead, and that she attempted suicide so that her husband might not be taunted with having a murderess for a wife. She expressed no remorse or regret. She continued in this state for nearly two months, when she again became depressed and melancholy, crying bitterly at times, as she said, about her child, but in no way alluding to her own guilt. At the next menstrual period she again took a low turn, but not so severely as on the former occasion. Both attacks lasted about a week. She soon afterwards began to improve, her expression brightened, she worked cheerfully, saw her husband frequently, and joined in all the amusements. She became a great favorite both with attendants and patients. Menstruation was always regular. Six months after admission she was discharged, on the authority of the Procurator-fiscal, recovered. Within two years after her discharge she was again confined. She passed through her pregnancy without a bad symptom, and made a good and perfect recovery. Her mind was not affected.

B. E., æt, 35, wife of tradesman; naturally cheerful, although thoughtful and reserved; steady and industrious; educated in one of the public hospitals; mother of several children. There exists strong hereditary predisposition, her mother having died in one of the Musselburgh asylums, which event, and the death of one of her children, are the alleged causes of her insanity.

She admits that, during the third month of her last pregnancy, she took morphia with the intention of committing suicide, and also bought oxalic acid for the same purpose; the oxalic acid she threw away, and now has the delusion that she thereby caused the death of ten children; she also thinks that she is constantly watched by the police, and must suffer a public death for her crimes. Bodily health weak; pale and bilious.

These delusions she seems to have kept to herself till a month after her confinement, on her admitting them to her friends she was sent to the asylum. It is possible that they never existed till subsequent to delivery, and that not till then delusion complicated the symptoms of melancholy. On admission she was dull, anxious, and fearful, had a vague dread that she was to be taken away somewhere, was idle, listless, and desponding. When asked how she was, she only answered, "miserable." She was ordered nourishing diet, iron, and other tonics. No great improvement manifested itself for upwards of four months, when she began to work a little, and occasionally admitted that she had no real cause for anxiety. A marked change for the better, however, came over her after a very severe attack of influenza, the delusions were much more under her control, and the lucid intervals became more frequent and prolonged. Seven months after admission, she was discharged on the sanction of the General Board of Lunacy, although not quite well, but it was thought that change might be beneficial, it happily was so, and she is now in the full possession of her faculties.

It would be needless to cite more cases of a similar nature, although I could easily do so. No two cases are *exactly* alike, but the great leading symptoms agree, differing no more than is observable in every disease according to idiosyncrasy or circumstances.

The case of A. C. was certified as one of "suicidal and homicidal insanity," but this was done solely for the purpose of giving a name. The act of homicide was distinctly recognised by the eminent physicians, who certified as the result of a perverted train of thought consequent upon a peculiar bodily condition. Homicidal impulse accompanies many other well-marked forms of insanity, —e.g., epileptic insanity,—but no one would consider a

homicidal epileptic, a case of "homicidal insanity," any more than he would designate the albuminuria of scarlatina "Bright's disease," simply from the fact that this symptom is common to both maladies. The cases stand apart. A homicide is committed by a puerperal female,—hers is a case of puerperal insanity. A similar act is committed by an epileptic,—his is a case of epileptic insanity. Albuminuria supervenes on scarlatina; this does not make the case one of Bright's disease, although the same symptom results. No insane impulse can exist independent of a causating structural change. To class all homicidal lunatics together is simply begging the question; we might as well content ourselves with calling all exanthemata by the common name of spotted diseases, without further distinction.

The last case I shall instance of this form of disease is one in which melancholy was associated with moral perversion in the form of dipsomania. It seems doubtful whether the latter ever exists by itself; if so it is rare. The strong probability is, that it is the result of the depression—the patient takes to stimulants to alleviate her distressing sensations, and in so doing becomes subject to the usual results of drunkenness. Should the case not improve, the moral perversion overrides the original melancholy, and, as in the following instance, becomes the leading characteristic of the insanity.

J. M. B., æt. 26, married; of limited education; naturally of cheerful temperament. Her mind was affected after her second pregnancy, but she made a good recovery. She had also a slight return after her third and fourth confinements. On her becoming pregnant for the fifth time, a great change came over her whole nature; she became at first irritable, unsettled, and excitable, and then untruthful and intemperate, pawning or selling her household effects, her own, husband's, and children's clothes to procure drink; was lost to all sense of decency. As gestation advanced, she exhibited suicidal tendencies, and at last became so dangerous to her husband as to make her removal to an asylum imperative. This state of matters was directly opposed to her natural disposition. From being cheerful, she had become melancholy and depressed, on which the more serious symptoms had supervened in the order above described.

On her admission she soon showed the character of her disease in lying, stealing, annoying her fellow-patients, pretending various ailments, and generally making as much fuss and getting as much attention as possible. On several occasions she tried the effect of hysterics, but soon gave them up when she found that they did not attract much sympathy or notice. She invented the most ingeniously contrived stories reflecting on the character of all around her, fully understanding the "lie with the circumstance." This state of matters continued for nearly three months with but slight amelioration, when a sudden improvement took place; she began to work a little in the gallery, ceased to steal and lie, and her conduct and demeanor became quite natural, kind, pleasant, and agreeable. Her recovery took place at the commencement of the fifth month of pregnancy.

She was confined in due course, but shortly afterwards the melancholy returned, and she made a most determined attempt at suicide by taking a considerable quantity of black hellebore. From the effects of this drug, she was saved by the use of the stomach pump. On her readmission she was deeply melancholy, and suffered much from the milk. By the usual appliances she was soon relieved from this; and tonics, iron, and good diet were administered, with such good effects as to enable her to leave the asylum in two months, quite well.

Three months after her discharge she again became pregnant, and again the moral perversion returned in, if possible, greater force than on the previous occasion. To it was now superadded a series of delusions as to her husband and neighbors of a suspicious character. From this it was prognosed that the disease would be much less amenable to treatment. This state of matters went on with little intermission till her child was born, a fine healthy boy; the labor was tedious, but she made a good recovery.

The following is the entry in the case-book three months afterwards:—"No improvement in her mental condition. A more complete moral perversion could not exist in any one. She lies, steals, tells the nastiest stories without a blush, has not a grain of gratitude in her composition, invents the most dangerous stories against those who have been kindest to her, and seems, in fact, to be an incarnation of evil. She became quite unbearable in the sick-room, so her baby was weaned, and she was removed to another part of the house." Again, four months after,—"She broke a number of panes of glass to-day. Judgment, powers of reflection, and self-control much impaired. Neat and tidy." Subsequently, she again improved, and was removed by her husband; but it has since been ascertained that being again pregnant, her old malady has reappeared. She is now a patient in the asylum.

Puerperal Insanity.

There is no section of the tables illustrative of puerperal insanity which I am so anxious to amend as Section 5, Table II, page 1026, May 1865. Out of 73 cases of puerperal insanity, 53 are there stated to have been characterized by acute mania, 15 by melancholia, 4 acute dementia, and 1 epileptic insanity.

There is not any system of medical nomenclature which leaves such a wide margin for the taste and fancy as the existing one of mental diseases; and, consequently, we often find one man calling a case one of melancholia which another designates dementia, or a difference of opinion arising as to acute dementia and mania. The distinction between the last two forms of aberration is so very slight and ill-defined as to render them mere matters of degree. Unluckily, in compiling the tables, the nomenclature of each reporter was adopted, and thus this section became complicated, as it was found, on further inquiry, that the symptoms in the four cases of so-called acute dementia were equally those of mania,—in fact, in some respects preponderated strongly in favor of puerperal mania. I would therefore amend this section by classing these 4 acute dements under the head of acute mania, thus making 57 cases of acute mania out of a total of 73. The one instance of epileptic insanity is certainly exceptional, and must be regarded as such. 15 cases remain under the head of melancholia. Regarding these, the curious fact was made out that none showed symptoms of insanity until sixteen days after labor. The liability to recurrence of the melancholy originating during pregnancy, after labor, suggested the strong probability that not a few, at least, of these melancholy puerperal patients might have been the subjects of morbid depression previous to confinement. Inquiry was made in the very few cases in which it was possible to do so, and the conviction was strengthened, although not positively confirmed. My opinion on this point is based on cases which have been under my own observation, and it is that the insanity of pregnancy frequently recurs after labor, and that it never does so in any other form than that of melancholy. Within the last few weeks two cases have come under my care which bear out this idea. Both were much depressed (one suicidal) during pregnancy; in both the same symptom returned about a month after confinement. I believe puerperal insanity to be a thing by itself, characterized by a constant train of symptoms of a maniacal character, and that the melancholy which occasionally supervenes some time after labor is but the recurrence of the insanity of pregnancy. This seems the more likely when we consider that the excitement consequent on confinement has almost abated by the time when this symptom presents itself, that the patient has, in a large majority of cases, returned after sixteen days to the condition she was in previous to labor, and that her constitution has not had time to be debilitated by nursing.

It has been said by no less an authority than Dr. Gooch that no physician could by simply looking at and examining a patient, diagnose that hers was a case of puerperal insanity, unless her history was at the same time

afforded him. This I take the liberty of doubting, and will instance a case in point. A woman was brought some months ago to the Royal Edinburgh Asylum by the police, under a certificate of emergency, in a highly maniacal condition. No information could be afforded further than that she had been found in this state by the police, and had been at once removed to the asylum. There was no other evidence whatever; but the physicians who saw her on admission, before she was taken to the ward, immediately came to the conclusion that she was suffering from puerperal mania. Within a few days the inspector of poor of her parish informed them that she had been confined five days previous to her admission.

The puerperal mania has symptoms which, as a rule, cannot be mistaken for any other form of insanity, with perhaps one exception,—mania *a potu*; but even here there are points of diagnosis which are very prominent. The bodily symptoms are at direct variance with the mental. She is pale, cold, often clammy, with a quick, small, irritable pulse, features pinched, generally weak in the extreme, at times almost collapsed-looking. But withal she is blatanly noisy, incoherent in word and gesture; she seems to have hallucinations of vision, staring wildly at imaginary objects, seizes on any word spoken by those near her which suggests for a moment a new volume of words, catches at anything or any one about her, picks at the bed-clothes, curses and swears, will not lie in bed, starts up constantly as if vaguely anxious to wander away, and over all there is a characteristic obscenity and lasciviousness. Suicide is often attempted, but in a manner which shows that it is not the result of any direct cerebration; she may wildly throw herself on the floor, attempt to jump from the window, or draw her cap-strings round her throat, but there is no method about it, it is an impulse, the incentive of which is purely abstract.

This description of course applies to the severest class of cases, but it is taken from the recollection of not a few. Even where the symptoms are not so acute, the same *tone* exists; and the shorter the time after its super-vention, the more acute and marked the mania, and more rapid the recovery. As was remarked in the original paper, masturbation is sometimes noticed, but this is the result more of a wish to allay than excite irritation. The obscenity of word and manner often continues for a time during convalescence.

Since the first paper was published, several cases of puerperal insanity have come under my notice. In these particular attention was directed to the state of the urine, and in none was the presence of albumen detected, with one exception, and in that the lochial discharge was excessive. It has been said in describing the symptoms of puerperal insanity that the patient "is pale, cold, often clammy, with a quick, small, irritable pulse, features pinched, generally weak in the extreme, at times almost collapsed-looking."

In the work of Drs. Tuke and Bucknill on "Psychological Medicine," p. 259, it is stated as follows:—There is, however, a class of cases in which the pulse and other symptoms indicate an inflammatory condition of the system, and such cases are of a much more serious character. Dr. Burrows noticed them chiefly in connection with the first secretion of milk, on the fourth or fifth day. Some of these are examples of phrenitis, and not properly of mania. Frequency of pulse is a symptom of primary importance. An *inflammatory* state of the pulse is indeed a most serious symptom; and why? Because it indicates not phrenitis, which is *excessively* rare, but inflammation of some internal organ, of which the usual symptoms are masked by the mental affection. The latency of the symptoms of acute and chronic diseases amongst the insane is one of the great difficulties asylum physicians have to contend against. Phthisis may exist for years undetected, were it not for the stethoscope, without cough, sweats, emaciation, or hectic, till the disease is very far advanced. Tuberculosis of other organs may run its course without any indication of its presence. Caries and necrosis kill without pain, most extensive abscesses collect with-

out causing inconvenience. I have known demented die of typhoid fever without any symptom but diarrhoea. This peculiarity extends to inflammation of all the internal organs. Reflex action is impaired amongst the insane;—this is exemplified in a small way by the idiot as he sits with a drop hanging from his nose without any irritation of that organ; in a greater, by the dement or chronic maniac dying of consumption, bronchitis, or pleurisy, without cough or pain, however extensive the internal disturbance may be. This remark applies equally to the subject of puerperal insanity, in whom inflammation of vital organs may exist *without a symptom further than a slightly inflammatory pulse*, and I have known even this symptom absent. But where it is present the prognosis must be unfavorable. I am sorry to admit that, in my experience, which extends to four cases complicated with internal inflammation,—two of bronchitis, one each of peritonitis and pelvic cellulitis,—the result was invariably fatal. There may have been circumstances in these cases which tended to such an issue, such as aggravation of the disease produced by the moving of the patient from her home, and consequent cold and exposure; nevertheless it justifies the conclusion that any such combination must be looked upon as serious in the extreme.¹

On the other hand, puerperal mania of itself does not kill, and, where you have to combat it alone, not only death need not be dreaded, but, in the very large proportion of cases, a return to sanity may be prognosticated. It is, perhaps, the most curable form of insanity. This statement is made advisedly, but does not extend to those cases which are placed under asylum treatment as a *dernier resort*.

A strong protest must be here entered against the routine treatment which we so often see, more especially in the country, carried out quite indiscriminately. To shave and apply cold to the head, administer tartar emetic, purge and blister, are not uncommon remedies (!) applied where mania exists. In puerperal insanity this (bad) treatment insures a lapse into dementia,—the patient can resist the disease, but not the remedy; each dose of antimony, each cold application, each blister puts the case further and further beyond the control of the physician. In the Fife and Kinross Asylum are some sad instances of women slightly but hopelessly demented, of whom there can be no doubt that if they had been treated in any of our public asylums they would now be useful members of society.

Drugs seem of no avail; opiates, more especially, do more harm than good. A large dose given at the very first indication of insanity is said to have the effect of cutting short the attack; this I cannot speak to, but repeat the statement previously made,—that when it has fairly established itself, although large doses of opium may moderate the intensity, they tend to prolong the period of the mania. Stimulants seem to feed the excitement without increasing the bodily strength. The best calmate is food which can be easily assimilated; it should be administered frequently, in small quantities. The patient has a better chance of sleep after a dose of beef-tea than after a dose of morphia. The bowels are often in a very constipated state,—this condition must be attended to cautiously. Above all, careful nursing is the great element of success,—the patient should never be left for a moment till a sound sleep indicates approaching convalescence.

The following cases are extracted from the records of the Edinburgh Royal Asylum, and were reported by myself:—

B. C., æt. 32, married; in good circumstances; naturally frank and cheerful; mother of five children.

The following history of her case was sent with her. She received a great

¹ Puerperal paraphrenitis is by no means denied. Two probable cases are alluded to in the previous paper. But it is of rare occurrence, and may be mistaken for puerperal insanity associated with internal inflammation. Marked head symptoms always, however, indicate the diagnosis.

shock when she was three months gone in pregnancy with her fifth child, from an attempt at burglary being made on her house when her husband was absent, but no symptoms of anything like insanity supervened. She was doing well up to the seventh day after her confinement, which was a somewhat protracted one, and succeeded by considerable hæmorrhage. On that day, however, when sitting up in bed, a few friends being present, the discharges suddenly ceased, and shortly afterwards she became maniacal.

On admission she was so weak as to be considered almost moribund, but fearfully excited, causing astonishment as to how so much noise could be produced by one so debilitated. The face was blanched, eyes wild and staring, pulse small and quick, surface cold and clammy; she was so exhausted as to necessitate her being carried to bed. Her mania was of the wildest description, she incoherently raved that she had brought forth dogs instead of children, recognized old friends in the strangers now around her, cried that her food had been poisoned, pointed to imaginary objects, and at intervals screamed loudly. She could with difficulty be restrained in bed, requiring the constant attendance of two nurses to control her. During the first night of her residence she was utterly sleepless, the mental symptoms not in the least abating. She was ordered drachm doses of the solution of the muriate of morphia, which were persevered in till she had taken one ounce, but sleep was not produced. Brandy, custard, and beef-tea were administered. Date of admission, January 26th.

29th January.—No improvement; mental excitement has continued since admission; to-day 3 i. doses of Squire's tincture of Indian hemp, pushed to half an ounce, produced sleep for a short time, and some degree of composure. (*Doubtful; more likely to be the result of exhaustion, and the beneficial effect of nutriment and nursing*).

30th.—Nervously excited, screams fearfully at the slightest sound. (*Probably the result of the cannabis*).

31st.—Somewhat stronger, but still in a most precarious condition, as the excitement continues though not to such an extent as on admission. To take 15 drops of tincture of steel three times a day.

10th February.—Since last entry this patient has gradually improved, but is still very weak. A small abscess has formed over the right nipple, also on both thumbs; on being opened they discharged healthy pus.

13th.—To-day she menstruated,—the discharge was not great, but the pain was considerable. The skin over the sacrum shows symptoms of breaking. Tincture of arnica to be applied. Attendant still to be constantly with her. She now takes her food ravenously, and her general health is much stronger. Her mind is also much more composed, although she requires the cannabis at night. She spoke quite rationally to-day for the first time. Oleum morrhue prescribed, but it produced diarrhœa.

15th.—To-day, rose from bed for a couple of hours. Very weak still. Skin over sacrum quite healed. She now takes a pint of porter and four ounces of wine daily. Nervousness continues, and the delusions occasionally return, more particularly when she wakes suddenly; they are assuming a religious character.

21st.—Sleeps well without opiates.

23d.—Not so well, rather restless at night. Draught to be continued.

25th.—So restless as to require the nurse to sleep with her in the same bed. Saw her husband to-day with no bad result.

3d March.—Nurse still sleeping with her; requires the draught at night. To-day ordered valerianate of zinc and quinine, a a gr. ii.

4th.—Attempted suicide to-day by sticking knitting-needle into her neck, but did not succeed in injuring herself much. Still very noisy at times; ordered a slight shower-bath morning and evening.

9th.—Sleeps about three hours each night; on awakening is very noisy.

1st April.—Since last entry has improved very much in mind and body. The narcotics have been discontinued.

28th.—Still improving although slowly. Tonics have been continued.

20th May.—Is slowly but gradually recovering. Still very childish, and occasionally plays very puerile pranks.

For the next two months her progression toward sanity seemed to be effected by fits and starts. She would improve a little, continue in that state for a fortnight, and then make another step in the right direction. About the end of June, she was sent out on trial, but returned of her own accord in a few days, saying that she preferred the asylum. She on two occasions subsequently wrote letters containing incoherent nonsense bearing on religion, and at times would dress herself fantastically, but, notwithstanding, her recovery progressed favorably step by step, and on the 20th of August she was discharged recovered. She has since been confined twice, with no bad results.

This case is reported *in extenso* to illustrate that the treatment by narcotics was a mistake; the continuance and recurrence of the mania was long and frequent, and I very much fear it was the result of the large doses of opiates. This opinion is confirmed by the fact that all subsequent cases under my care have recovered comparatively rapidly without their employment. Nor did the stimulants produce any lasting good: the ultimate recovery depended much more on careful and nutritious diet, nursing, quiet, and absence of exciting influences.

CASE 2.—E. R., æt. 25., married; trade, hat-blinder; eight days insane; first attack; her aunt is an inmate of Morningside Asylum

This woman became violently maniacal two days after the birth of her first child, and was sent to the asylum eight days after the appearance of insanity. She was exceedingly weak on admission, small quick pulse, pale and blanched. She was noisy, and, as far as she could be, violent, cursing and swearing, obscene in speech and action. On being put to bed appeared to masturbate violently, and could with difficulty be restrained. Sent to sick-room. Ordered beef-tea and custard, to be frequently administered in small quantities; attendant to be constantly with her. She was utterly sleepless; the excitement continuing without intermission, and of a character resembling that of delirium tremens. She had distinct delusions as to personal identity. On the third night, she slept for four hours, and the symptoms abated markedly afterward, the obscenity persisting longest. A fortnight after admission she was up, her strength having materially improved, as also the mental condition; she was, however, mischievous and erotic for two months, with a slight degree of exaltation. Tonics and careful dieting were the only remedies employed. The insanity gradually disappeared, and she was discharged recovered in less than four months.

CASE 3.—A. B., married; formerly a teacher. Immediately after her first confinement she was attacked with acute maniacal symptoms, the labor was natural, but the child died a fortnight afterwards. Her mother states that she was exceedingly violent, and attempted to destroy her child, and subsequently her own life. This condition lasted for five weeks when she was brought to the asylum. On admission she was excited, though taciturn, and attempted to swallow a brooch during the first night of her residence. She walked up and down, and even when induced to sit could not stay quiet for a moment, jumping about and fidgeting. She had delusions as to personal identity. Quite sleepless. An attendant was ordered to be constantly with her. An abscess of the right mamma was discharging freely. Tonics and nourishing diet were prescribed. After a few days she began to sleep better, and the restlessness decreased; she took to singing and playing the piano. Her manner was characterized by a considerable degree of amative-ness; when moving about she grimaced and conducted herself in a playfully ludicrous fashion. A marked change came over her for the better shortly after the sinus of the breast had been freely laid open, and the wound commenced to heal. The expression of her face, which had previously been rather repulsive, became pleasant and agreeable, she gradually gave up her

restless habits altogether, and was at last induced to sew. When the breast had quite healed, the symptoms disappeared, a little waywardness and intolerance of control excepted, and she soon became the life of the gallery and a great favorite. She subsequently had one or two slight melancholy fits, but within six months of her admission she was discharged perfectly recovered.

It is in my power to bring forward a long series of such cases, but the above seem to illustrate the general characteristics and successful treatment of the disease. The period of excitement lasted from five days to three weeks, always leaving behind a degree of dementia, the last delusions to disappear being those as to personal identity; in some a slight melancholy was observed, but not deep seated. The treatment seldom altered, except as to the nature of the tonics. As the mind re-established itself and the more violent symptoms were overcome, porter or wine was administered, and at this stage proved highly beneficial.

The following cases illustrate a non-successful issue.

J. H., *æt.* 30., "married; formerly house-servant; three days insane; first attack; cause, childbirth. Respectable education, cheerful disposition, habits steady and industrious. A sister is said to have suffered in the same way after childbirth." Admitted 20th May.

Bodily health reported as "weaker than usual, health as good as possible, having been only confined of her first child after an easy labor."

The history of this case, beyond that given in the statement, is, that a fortnight ago she was confined and continued very well until three days ago, when symptoms of insanity set in. On admission she was fearfully violent and destructive, noisy and loquacious. The pulse was *somewhat low*. She was very weak. We were informed that previous to admission she had been treated with antimony for the purpose of allaying the excitement. She was put to bed in the sick-room, and ordered wine, beef-tea, and custard. To be under special observation. During the afternoon the pulse became of better character, and the patient seemed stronger. She complained of pain over the abdomen, but not more than might have been expected in a woman so recently confined; the bowels were opened by an enema.

21st *May*.—Has not slept during the night, still noisy, swearing and cursing, with difficulty kept in bed. To continue on the same diet and stimulants. During the day the symptoms did not abate. Towards the evening she was somewhat quieter, and seemed inclined to sleep. Pulse improved.

22d.—Early this morning symptoms of sinking set in, which were not relieved by the administration of stimulants. At 7 A. M., the extremities were quite cold, but the excitement was not abated. At 9, she was evidently fast sinking—there was a lucid interval of about an hour. She died at 10 A. M.

On post-mortem examination, extensive pelvic cellulitis was found; several ounces of pus were discovered. A thin plate of osteophyte was observed on the dura mater, under-frontal and parietal bones. Grey matter congested; white matter oedematous.

Mrs. B. B., *æt.* 25, admitted 15th April; "married; kept house; Protestant; first attack; insane for four days; supposed cause, childbirth. No hereditary predisposition."

This lady was admitted in a state of great exhaustion and considerably excited. Her appearance was typically one of puerperal insanity,—the wild staring eyes, catching at trifles, resembling somewhat delirium tremens, were very characteristic. She had delusions as to personal identity. Her movements were often indecent. She had been confined nine days when the mania appeared. It was her third child; all her family having been born within four years. She was very anæmic. The confinement had been natural, with only slight hæmorrhage.

16th *April*.—Is very excited,—has not slept. She is fed with Liebig's extract, jelly, milk, etc.

17th.—As yet no sleep; still excited; picking at bedclothes. Her eyes follow imaginary objects.

18th.—Slept a little this morning. After she awoke, her pulse was found to be 140, tongue dry. About 4 P. M., she took a fit of syncope, so profound that she was thought to be dead.

19th.—Symptoms of bronchitis have set in, her pulse is very quick, small, weak, 160; at times so rapid that it cannot be counted. Dr. M. Duncan was called in to see her.

18th.—Ordered mustard to the chest, and an expectorant mixture; to get wine.

20th.—She has great difficulty in expectorating; weaker; has had another attack of syncope.

21st.—Much weaker.

22d.—No better,—worse in fact; to get brandy in small quantities, and often.

23d.—At times is nearly suffocated by the bronchitic discharge; very weak; sinking; still very insane.

24th.—Moribund from suffocation.

25th.—Died this afternoon at 5 P. M. Post-mortem examination was not allowed.

There exists a small class of cases midway between puerperal mania and insanity of lactation, viz., those whose insanity supervenes between one and three months after confinement. A large number of these, as has been already said, are depending on a recurrence of the insanity developed during pregnancy, but there do occur instances where no such previous aberration has been noticed. These are complicated cases, usually dependent on a weakened state of the system from too rapid child-bearing. For instance, a woman of naturally weak constitution bears three children in four years, and early in the nursing of her last child shows symptoms of insanity. Mania is the usual symptom, but bears a stronger affinity to that consequent on lactation than to puerperal mania. Still these are doubtful cases, and it is difficult to assign them to either class, but on the whole, it seems most probable that they belong to the former. Profuse hæmorrhage also, in some rare instances, tends to the production of insanity at a lengthened period after labor; an anæmic condition being produced which is very liable to affect the mind.

Insanity of Lactation.

There is little to be added to the remarks made on this form of insanity in the statistical paper. It is distinctly the result of an anæmic state of the system, and in a modified form is not unfrequently noticed among patients applying for advice in general hospitals. Nursing women present themselves complaining of symptoms of hysteria, restlessness at night, and a vague feeling of apprehension, over-action of the heart, bronchocele and exophthalmia frequently are present, anæmic bruits are heard on auscultation, and a morbid condition of the blood detected on microscopic examination.¹

These physical signs are frequently observable amongst those patients in whom insanity has been developed. The mental symptoms are either mania or melancholy, the latter being the more frequent, and accompanied by delusions either of a suspicious character or as to personal identity, hatred of children, husband, or friends, and a strong suicidal tendency,—it is seldom, however, very profound. The mania is of an evanescent nature, violent whilst it lasts, but not associated with the obscenity observable in

¹ Vascular Bronchocele and Exophthalmos. Dr. J. W. Biggle. *Edin. Med. Jour.*, 1868. pp. 917.

puerperal mania. In this form the insanity of lactation is more rapidly amenable to treatment than when melancholy exists; but in both forms, when taken in time, the disease is readily curable.

The following case illustrates the melancholia of the insanity of lactation:—

J. C., æt. 32, married; wife of tradesman; mother of four children; has always been a very devoted mother and wife; first attack; her mother died insane. She has been nursing her baby for eleven months, and for the last few weeks it has been noticed that her manner and appearance have undergone great change. She began to be suspicious of her husband, and at last took a positive dislike to him. On admission, a slight scar was observed on her neck, which she admitted she had caused by attempting to cut her throat. Her general appearance indicated anæmia. A distinct bruit was detected, and cervical pulsation; the eyeballs were protruding. She was exceedingly depressed and nervous; said that she "feared herself," that her husband had always been a "guid man" to her, but that she could not overcome her hatred to him. To be under constant observation; ordered nourishing diet and tinct. ferri mur. For a few nights after admission, she was sleepless and restless, at times talking and muttering to herself. She was soon induced to sew and otherwise employ herself. Within a month considerable improvement took place in her bodily condition, but the mental symptoms did not materially abate. Shortly afterwards, however, symptoms of convalescence set in; she gradually but slowly became more active and energetic, evinced interest as to her husband and family, and slept soundly at night. A variety of employment was found for her, which she readily undertook, feeling that it was highly beneficial to her case; the melancholy state had quite disappeared five months after admission, when she was discharged recovered.

The following case was characterized by mania;—

N. A., æt. 35, admitted 10th December; "married; wife of laborer; Protestant. First attack, which has lasted ten days; cause, nursing a child for eight months." One of the medical certificates stated as follows:—"Incessant talking; now and again furious and difficult of restraint; says she is with God; says she is an angel, and the only one with God in heaven."

This patient, on admission, was acutely maniacal, very violent, cursing and swearing, noisy night and day. She had a delusion as to the visiting physician being a young doctor whom she hated, and, accordingly, swore at and cursed him whenever he came near; she also supposed that the head attendant was his mother, but took very kindly to her. Ordered to be kept in bed, with constant attendance, and to be supplied liberally with beef-tea and other nutritious diet.

16th December.—Up to to-night Mrs. A. has been very noisy and violent. On the reporter visiting her at about 8 p. m. he found her lying with her face covered up with the sheet. On pulling it down the expression of her face was found to have undergone a great change since the morning,—it was quite natural,—and, on being addressed, she spoke rationally and civilly. Early in the forenoon she had taken a large meal consisting of bread and beef-tea, had slept shortly afterwards, and awoke in the state described.

17th.—A slight remission to-day, chiefly evidenced by irritability of manner to other patients.

1st January.—Quite convalescent. On conversing with her about her late attack, she said that she recollected perfectly everything which occurred during her illness. She remembered that she entertained the delusion that the reporter was a doctor whom she disliked, and that the attendant was his mother; also that she had sworn at and abused him, apologising most penitently for so doing.

12th.—This day discharged recovered.

Curable as these three diseases are, there exists a class of patients in which permanent bad effects result from the attack,—that in which the patient is congenitally weak-minded. Wretched, half-idiotic girls, whose weakness

has been taken advantage of, become maniacal after confinement or during nursing, and, although the mania disappears, a greater degree of imbecility is left after the attack than existed previously. In these patients, also, the disease is almost sure to recur with each confinement.

In conclusion, I would remark that the consideration of this long series of cases has convinced me of the necessity for a more accurate classification of so-called mental diseases. The one at present in use is unsatisfactory, arbitrary, and perplexing. It is a mere begging of the question. We might as well be content with the diagnosis of a disease as "dropsy," irrespective of its cause, as mania unconnected with a specific bodily condition; and if we succeed in so associating a mere symptom with its cause, why not give the disease a specified name? Advances are being made in the right direction. Dr. Skae of Morningside, some years ago proposed a scheme of classification based, not on the symptoms individually, but on a system of grouping peculiar symptoms and associating them with peculiar bodily conditions. This had been done already in the case of general paresis, epileptic insanity, puerperal insanity, senile insanity, etc., thus demonstrating that such a classification is possible. Dr. Clouston has described another well-marked form,—“the Insanity of Tuberculosis,”—and other papers have been published by Dr. Skae's old pupils with a view of elaborating his system. That great difficulties stand in the way, and that the original scheme is imperfect and requires modification is true; but, as our knowledge increases, so will it become evident that this is the true theory on which to found a rational classification.

A SINGULAR CASE OF NEUROSIS, by Dr. Carlo Berarducci.—The case narrated under this heading is that of a woman, a native of Perugia, who suffered with somnambulism from the age of fifteen. Her father died insane; her mother was living, but had ovarian dropsy, and she had two brothers alive and in health, although one in his youth exhibited much extravagance of character. When five years old she nearly perished from smallpox, but afterwards grew stronger and enjoyed fair health, being subject, however, to headache, and of a melancholy disposition. At seven she was placed in a conventual school; when eight, and again when twelve years old, she had a severe fall on the head, and on one occasion was rendered insensible for a considerable time. At twelve menstruation was established, but not long after was suppressed by a fright she received, and did not reappear until her nineteenth year. It again ceased, and did not recur until she was twenty-two; after which it was regular, but very deficient and painful. At the age of fifteen somnambulism commenced; she wandered at night and could not find her way back to her bed in the dormitory without the guidance of others. A lamp burned in the apartment, but she was quite unconscious of its light, although she could make her way to a particular window, having a well below it, and through which she made attempts to get. She frequently called the doorkeeper to her, whom she would severely scold, although in her waking state she held this person in much fear and respect. At eighteen she was removed from the school and entered on service as a housemaid, the somnambulism still continuing for six or seven months. At length her mistress had her to sleep with her, when the morbid state gradually declined. For three years she remained better, the attacks being very few, and now for fourteen years she has had no return.

During her residence in the school she was melancholic, fond of solitude, excessively devoted to religious asceticism, and exhibited a strong erotic tendency—she also became the victim of a certain degree of demonomania. When twenty-two years of age she became desperately in love with a young man, but would not marry him. Three years subsequently she had typhoid fever, recovered slowly, and afterwards exhibited great deterioration both in her mental and physical condition, and on two occasions attempted suicide. There was much general debility, with gastric pain and indigestion. Her

headache was severe and almost constant, obliging her to remain in bed for two or three days together. The most intense pain was in the occipital region and vertebral column, and was accompanied by constriction and weight, especially in the lower extremities, which were nearly always cold. There was a tendency to syncope, some dyspnoea at times, and uterine pains, aggravated during menstruation, with leucorrhœa and globus hystericus. Her nights were very restless; her sleep disturbed by frightful visions, the best remedy for which was the presence of a light in her room. Her vision was weak, and she had frequently hallucinations of sight, of hearing, and of smell. Her memory was very infirm, particularly with regard to recent events; whilst her usual melancholia and quietude were replaced at the menstrual period by agitation, sometimes amounting to actual mania, and attended by ill-feeling towards, and a propensity to injure her mother, and also by general contrariety of manner and perverseness. At times, this transition of one form of mental disorder to another was varied by the intervention of a short period of hilarity, with passing farcies of being gigantic, or otherwise of dwarfish dimensions. After the first few years of her residence in the conventual school, and when she was in the habit of passing much time in solitude, her mind would involuntarily engage itself in numbering objects in sight, running on, doubling and trebling with surprising rapidity. This mental labor soon afterwards was not limited to periods of seclusion, but was carried on when in company with others, and when engaged with work, continuing unchecked by the will or by diversion to other matters until darkness rendered objects around her no longer visible. This ungovernable propensity to count everything around her was the most remarkable feature in the case, which in other respects presented no very unusual symptoms, although a good example of somnambulism.—*Archivio Italiano per le Malattie Nervose, e per le Alienazioni Mentali, and Journal of Mental Science.*

PNEUMONIA AND MENTAL DERANGEMENT.—Dr. Wille reports seven cases of associated pneumonia and insanity, all of which he has met with during two years and a half. In four of the cases the mental derangement appeared with the development of the pneumonia; in two cases it appeared during its resolution, and in one during re-convalescence. In four cases there was hereditary or family tendency, and one was a drunkard. Four of the seven died when the pulmonary disease was at its height; in two, complete recovery took place, as regards the mental condition; while recovery from both physical and mental lesions occurred only in one. In the four fatal cases, cerebral hyperæmia was found in two, anæmia with signs of previously existing hyperæmia in one, and periencephalitis acuta in the fourth. In one of the other cases there was cardiac disease with disturbance of the cerebral circulation; in another there was probably anæmia, and in the last, the condition was probably hyperæmia. The form of the mental disorder exhibited, did not appear to possess any peculiarity. In three of the cases in which the mental and physical symptoms arose together, the disorder took the form of acute mania; in the other case there was melancholia with great excitement; in the three cases in which the derangement occurred during convalescence the form of the insanity was melancholia in two cases, and delirium of a maniacal character in the other. In the two melancholic cases there was probably anæmia of the brain. The author believes that there is no special character to be discovered in the mental symptoms of these cases, so that the results of the inquiry is only negative. As an aid to diagnosis and treatment, he recommends observation where practicable, by means of a thermometer, as peculiarly useful in asylum practice.

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